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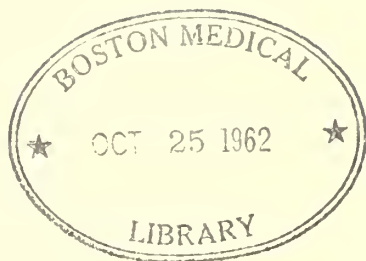
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THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

July 1961

No. 1

Hormones And Hemopoiesis I. Posterior Pituitary Extract And Erythrocyte Count

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Introduction

The evidence seems clear that hemopoiesis is influenced by the hormones of the body¹. Also, there is general agreement that erythropoiesis is modified by virtue of a secondary hormonal effect upon general metabolism rather than a direct and specific hemopoietic action^{2,3,4,5,6}. However, a number of points remain unclarified. One area which has received scant attention is the hematologic effects of minimal hypo- and hyperactivity of the endocrine organs. Secondly, only brief study has been made of the relationship be-

tween the posterior hypophyseal secretions and erythropoiesis.

This report is designed to analyze the relationship of small doses of posterior pituitary extract upon hemopoiesis as measured by changes in the circulating erythrocyte count.

Review of the Literature

Both lower animal^{2,4,5,6,7,8,9,10,11,12} and human³ studies indicate that a moderate to severe anemia follows experimental and clinical hypopituitarism. Dodds and his group^{13,14} observed severe macrocytic anemia with marked reticulocytosis and hyperchromia in guinea pigs and rabbits given large doses of posterior pituitary extract. These findings have been observed by other investigators^{15,16,17}. Davis¹⁸ noted that the daily administration of small amounts of posterior pituitary extract to both normal and splen-

This study was made possible in part by a grant from The American Society of Anthropometric Medicine and Nutrition. Dr. Page is in private practice. Dr. Ringsdorf and Dr. Cheraskin are staff personnel with the Section on Oral Medicine at the University of Alabama Medical Center in Birmingham.

ectomized dogs and rabbits induced polycythemia in approximately one to three weeks. Limited observations indicate that extirpation of the intermediate and posterior lobes does not produce an anemia¹⁹.

Method of Investigation

Forty male and female human subjects were studied with regard to the effect of small doses of posterior pituitary extract upon the circulating red blood cell count. Included in the group were ten male and 30 female subjects with a mean age of 50.9 and a standard deviation of 13.8 years. The participants in this experiment were chosen from a group of 683 persons as possible cases of mild posterior pituitary disease. An anthropometric technique, described elsewhere²⁰, constituted the method for classifying these individuals in the posterior pituitary group.

At the start of the experiment, all subjects were subsisting on a similar diet (low-refined-carbohydrate high-protein) as previously reported²¹. Each participant in this study was given either 1/400 or 1/800 grain posterior pituitary extract orally once daily for periods ranging from three to 27 days. The posterior pituitary extract was prepared from 1/10 grain posterior pituitary extract (Armour) by appropriate dilution. It is of interest to mention that the doses utilized in this study are approximately 40 to 80 times smaller than the amounts generally prescribed for patients suffering with diabetes insipidus²².

There are, admittedly, elaborate techniques now available for the determination of erythropoiesis. Until very recently the only methods included the measurement of peripheral erythroid values, reticulocyte response, and bone marrow activity. These techniques, though not completely satisfactory, are certainly simple and practical. For purposes of this study only the circulating red cell count will be considered. Attention will be directed to the hemoglobin levels²³, hematocrit²⁴, mean corpuscular volume²⁵, mean corpuscular hemoglobin²⁶, and mean corpuscular hemoglobin concentration²⁷ in subsequent reports.

Results

The data will be reported in two broad categories: (1) general characteristics for the entire group, and (2) subgroup analyses for the purpose of evaluating sex, and the effect of dose and duration of medication.

General Characteristics

Figure 1 graphically depicts (for the entire series of 40 subjects) the erythrocyte counts initially (on the abscissa) and the difference from the initial count (on the ordinate) after 3 to 23 days with posterior pituitary extract.

Simple inspection of Figure 1 suggests that the erythrocyte count changes with posterior pituitary extract administration. It appears that the highest red blood cell counts ($>5,000,000$) all seem to decrease. Also, it seems that the lowest erythrocyte counts ($<4,300,000$) all rise. A statistical analysis of these findings indicates a coefficient of correlation of $-.619$ and a $P < .001$. Thus, there seem to be significant changes in the erythrocyte count after posterior pituitary extract administration.

Subgroup Analyses

Sex Analysis: The group of 40 subjects included ten male and ten female patients who were given the same amount of posterior pituitary extract daily (1/800 gr.). Thus, a separate analysis was made of the changes in the erythrocyte count in the two sexes with the same medication regime.

Table 1 includes the original data. An examination of the ten male subjects given 1/800 grain posterior pituitary extract daily (Figure 2) shows that the subjects with red counts above 5,000,000 all decreased while, in the main, those below 5,000,000 rose. Thus, it would appear that the pattern previously noted for the entire group of 40 subjects obtains for the ten male subjects. These data were statistically studied and the coefficient of correlation of $-.804$ was found significant at the 5 per cent level.

Figure 1

comparison of erythrocyte counts before and after the administration of posterior pituitary extract (40 male and female subjects)

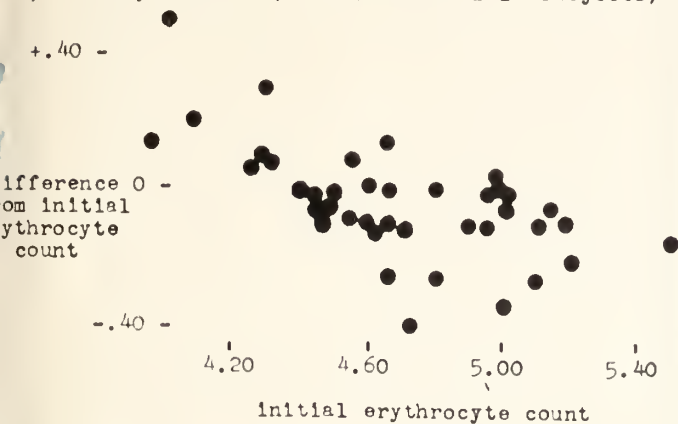


Figure 4

comparison of erythrocyte counts before and after the administration of 1/400 grain posterior pituitary extract (10 female subjects)

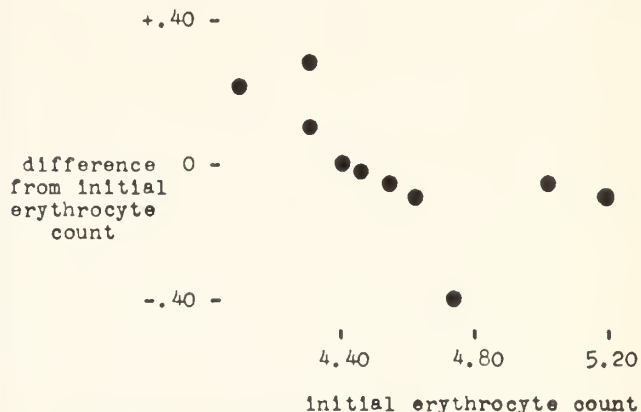


Figure 2

comparison of erythrocyte counts before and after the administration of 1/800 grain posterior pituitary extract (10 male subjects)

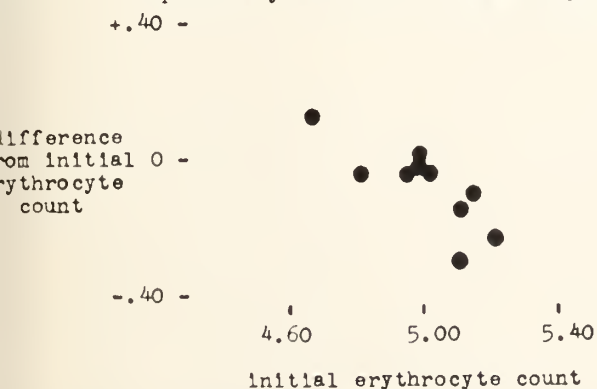


Figure 5

comparison of erythrocyte counts before and after the administration of 1/400 grain posterior pituitary extract for a 3-4 day time period (10 female subjects)

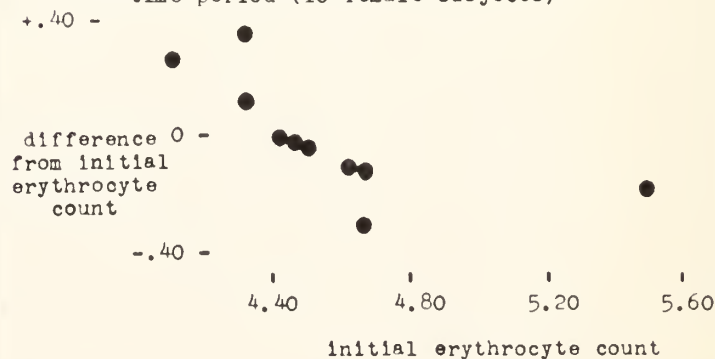


Figure 3

comparison of erythrocyte counts before and after the administration of 1/800 grain posterior pituitary extract (10 female subjects)

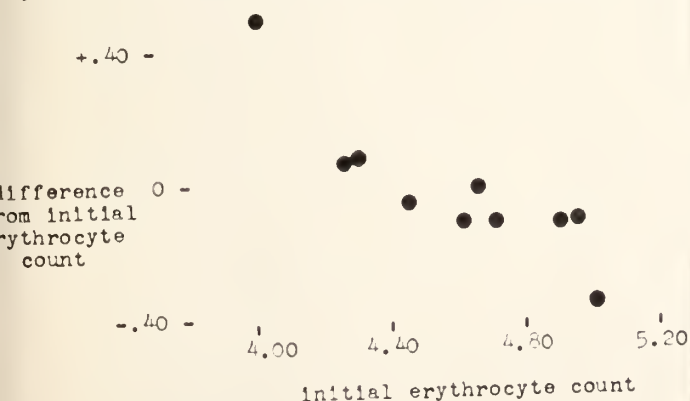


Figure 6

comparison of erythrocyte counts before and after the administration of 1/400 grain posterior pituitary extract for a 5-18 day time period (10 female subjects)

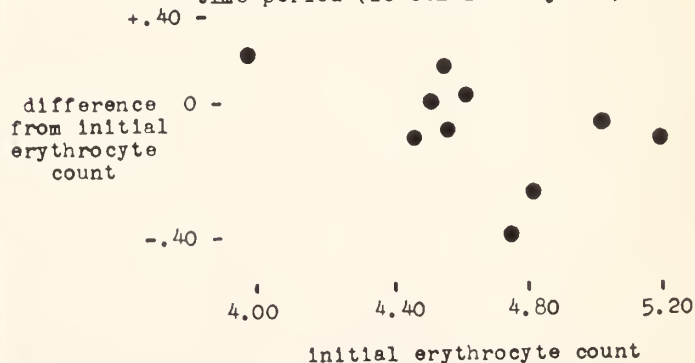


TABLE 1

EFFECT OF 1/800 GRAIN POSTERIOR PITUITARY EXTRACT UPON THE ERYTHROCYTE COUNT

patient number	age	sex	number of days of therapy	initial red cell count	final red cell count	difference in red cell count
206	68	M	3	5.10	5.00	-.10
083	27	M	4	5.15	5.10	-.05
268	43	M	4	4.65	4.80	+.15
471	68	M	4	5.10	4.85	-.25
493	59	M	5	4.95	4.95	.00
082	65	M	5	4.80	4.80	.00
541	59	M	6	5.20	5.00	-.20
605	39	M	8	4.98	5.00	+.02
174	61	M	15	5.00	5.00	.00
069	—	M	17	4.97	5.00	+.03
153	44	F	2	4.65	4.65	.00
366	46	F	4	4.30	4.40	+.10
292	40	F	4	4.45	4.41	-.04
373	40	F	4	4.70	4.60	-.10
219	50	F	6	4.60	4.50	-.10
341	49	F	6	5.00	4.65	-.35
283	30	F	7	4.25	4.33	+.08
638	58	F	9	4.90	4.80	-.10
663	46	F	11	4.95	4.85	-.10
522	45	F	14	4.00	4.50	+.50

Included also in Table 1 is the original information derived from a study of ten female subjects also given 1/800 grain of posterior pituitary extract daily. Basically, the pattern previously described for the male group obtains for the ten female subjects (Figure 3). In other words, the highest red cell counts ($>4,700,000$) decrease while the lowest ones ($<4,400,000$) rise with this particular hormonal regime. Also, a high coefficient of correlation was shown ($-.879$) and a $P < .025$. There is, however, one big difference in a comparison of the male and female groups. It should be recalled that the male red counts seem to migrate toward 5,000,000. A more detailed study of the female group demonstrates that the shift is toward 4,500,000.

Dose Analysis

Table 2 summarizes the findings in ten females subjected to 1/400 grain of posterior pituitary extract per day for three to 18 days. Table 2 also includes the data from ten females administered 1/800 grain of posterior pituitary extract per day for two to 14 days. Thus, an opportunity is provided to study the

relationship of the changes in the erythrocyte count with different dosages.

An examination of Figure 4 shows the pattern previously described for the entire group and for the male and female groups independently. In other words, the highest red cell counts decrease and the lowest ones increase under the regime of 1/400 grain. The findings are essentially the same following the administration of 1/800 grain of posterior pituitary extract (Figure 3). The coefficient of correlation for the group receiving 1/400 grain is $-.618$ with a P value of $>.05$. The coefficient of correlation for the group receiving 1/800 grain of posterior pituitary extract is $-.879$ and significant ($P < .025$).

TABLE 2

EFFECT OF POSTERIOR PITUITARY EXTRACT (DIFFERENT DOSES) UPON THE ERYTHROCYTE COUNT

patient number	age	sex	dosage	number of days of therapy	initial red cell count	final red cell count	difference in red cell count
476	69	F	1/400	3	4.45	4.44	-.01
602	41	F	1/400	3	4.40	4.40	.00
287	68	F	1/400	3	4.30	4.40	+.10
274	58	F	1/400	4	4.08	4.30	+.22
092	32	F	1/400	4	4.30	4.60	+.30
225	40	F	1/400	4	4.60	4.50	-.10
122	—	F	1/400	7	5.19	5.10	-.09
507	72	F	1/400	8	4.73	4.34	-.39
604	40	F	1/400	18	4.55	4.48	-.07
500	32	F	1/400	13	5.00	4.95	-.05
153	44	F	1/800	2	4.65	4.65	.00
366	46	F	1/800	4	4.30	4.40	+.10
292	40	F	1/800	4	4.45	4.41	-.04
373	40	F	1/800	4	4.70	4.60	-.10
219	50	F	1/800	6	4.60	4.50	-.10
341	49	F	1/800	6	5.00	4.65	-.35
283	30	F	1/800	7	4.25	4.33	+.08
638	58	F	1/800	9	4.90	4.80	-.10
663	46	F	1/800	11	4.95	4.85	-.10
522	45	F	1/800	14	4.00	4.50	+.50

Duration Analysis

Table 3 summarizes the data for a group of ten females subjected to 1/400 grain of posterior pituitary extract for three to four days. Included also in this same chart are the findings from a group of ten females administered

1/400 grain of posterior pituitary extract for five to 27 days. Thus, an opportunity is afforded to study the changes in the red cell count based upon the duration of therapy.

An examination of Figure 5 shows that the red cell counts in the higher brackets decrease while those in the lower groups increase during three to four days with 1/400 grain of posterior pituitary extract. The coefficient of correlation proved to be $-.664$ with a $P > .05$. Figure 6 graphically depicts the changes in the red cell count following five to 27 days under the same regime of 1/400 grain of posterior pituitary extract in ten females. A statistical analysis of these data indicates a coefficient of correlation of $-.492$ and a $P > .10$.

Discussion

It is rather interesting, from an examination of Tables 1-3 and Figures 1-6 that the relationship between posterior pituitary extract and erythrocyte count is not linear. In other words, this particular hormone does not consistently elevate or reduce the circulating red cell count. Rather, the evidence indicates a relatively narrow physiologic parameter of homeostasis. Apparently, the administration of posterior pituitary extract seems to attempt to right deviations from this very narrow range. Thus, it can be observed that relatively low and high red cell counts increase and decrease respectively. It is particularly pertinent that the changes seem to be very small. Thus, it appears that the erythrocyte count is very sensitive to this particular hormone. Mention should be made that these findings are not in agreement with earlier reports^{18,19}.

A second point worthy of mention is the seemingly different physiologic range or point in the two sexes. More detailed examination of Table 1 and Figures 2 and 3 disclose that the tendency to reach homeostasis in the male is at 5,000,000 circulating red blood cells. In contrast, the hypothetic norm in the female appears to be in the area of 4,500,000.

One point which remains unanswered is whether the changes which have been noted

TABLE 3
EFFECT OF 1/400 GRAIN POSTERIOR PITUITARY
EXTRACT FOR DIFFERENT TIME PERIODS
UPON THE ERYTHROCYTE COUNT

patient number	age	sex	number of days of therapy	initial red cell count	final red cell count	difference in red cell count
210	63	F	3	4.65	4.55	-.10
002	54	F	3	5.50	5.35	-.15
393	65	F	3	4.65	4.40	-.25
476	69	F	3	4.45	4.44	-.01
602	41	F	3	4.40	4.40	.00
287	68	F	3	4.30	4.40	+.10
274	58	F	4	4.08	4.30	+.22
092	32	F	4	4.30	4.60	+.30
236	36	F	4	4.48	4.45	.03
225	40	F	4	4.60	4.50	-.10
299	60	F	5	4.50	4.50	.00
336	72	F	5	4.55	4.65	+.10
085	65	F	6	3.95	4.10	+.15
122	..	F	7	5.19	5.10	-.09
088	21	F	7	4.60	4.62	+.02
507	72	F	8	4.73	4.34	-.39
664	64	F	9	4.45	4.35	-.10
500	32	F	13	5.00	4.95	-.05
604	40	F	18	4.55	4.48	-.07
430	50	F	27	4.80	4.55	-.25

are more significant in one or the other sex, at one or the other dosage, and in those receiving posterior pituitary extract for a relatively short or long period of time. These relationships have been analyzed statistically. The general statement can be made that none of the differences of the means proves to be statistically significant.

Two explanations have been proposed for the effect of posterior pituitary extract upon erythropoiesis. First, the posterior hypophyseal lobe may affect blood destruction possibly by way of the reticuloendothelial system¹⁴. Second, the anemia may be the result of hemodilution and eventual hemolysis due to water retention^{16,17}. The latter possibility seems more tenable since dehydration prior to pituitrin administration prevents the anemia^{17,18}.

In order to obtain information regarding the possibility of blood changes in parallel with urinary alterations, the female patients were placed into two groups. The first group included those subjects in whom the red blood

cell count migrated with posterior pituitary administration toward 4,500,000 per cu. mm. Table 4 summarizes the patients' case numbers, sex, initial and final erythrocyte counts, and the initial and final specific gravities of morning urine samples. Figure 7 pictorially depicts the specific gravity relationships at the start of the study and following a variable number of days of posterior pituitary extract administration. The coefficient of correlation proved to be $-.619$ (significant at the five per cent level).

A chart (Table 5) summarizes the information for those subjects with red blood cell counts which did not migrate toward 4,500,000 per cu. mm. These data are graphically represented in Figure 8. The coefficient of cor-

relation was found to be $-.595$ and not statistically significant ($P > .10$).

It would, therefore, seem that the hematologic changes observed in this report may be due, in part, to hemodilution and hemoconcentration.

Summary

1. This report describes the effect of small doses (administered daily and orally) of posterior pituitary extract upon the circulating erythrocyte count.
2. The evidence suggests that the number of red blood cells decreases and increases toward a homeostatic point or range.
3. There is corollary data to indicate that the

TABLE 4

MORNING URINARY SPECIFIC GRAVITY BEFORE AND AFTER POSTERIOR PITUITARY EXTRACT IN FEMALE PATIENTS IN WHOM THE ERYTHROCYTE COUNT AFTER THERAPY MIGRATED UP OR DOWN TOWARD 4,500,000 PER CU. MM.

patient number	initial red cell count	final red cell count	difference in red cell count	initial specific gravity	final specific gravity	difference in specific gravity
002	5.50	5.35	-.15	1.006	1.019	+.013
225	4.60	4.50	-.10	1.008	1.013	+.005
210	4.65	4.55	-.10	1.012	1.015	+.003
299	4.50	4.50	.00	1.008	1.009	+.001
122	5.19	5.10	-.09	1.011	1.012	+.001
366	4.30	4.40	+.10	1.018	1.018	.000
633	4.95	4.85	-.10	1.021	1.020	-.001
274	4.08	4.30	+.22	1.021	1.020	-.001
500	5.00	4.95	-.05	1.005	1.004	-.001
219	4.60	4.50	-.10	1.008	1.006	-.002
085	3.95	4.10	+.15	1.014	1.012	-.002
341	5.00	4.65	-.35	1.011	1.008	-.003
283	4.25	4.33	+.08	1.024	1.021	-.003
522	4.00	4.50	+.50	1.028	1.022	-.006
373	4.70	4.60	-.10	1.022	1.015	-.007

TABLE 5

MORNING URINARY SPECIFIC GRAVITY BEFORE AND AFTER POSTERIOR PITUITARY EXTRACT IN FEMALE PATIENTS IN WHOM THE ERYTHROCYTE COUNT AFTER THERAPY MIGRATED AWAY FROM 4,500,000 PER CU. MM.

patient number	initial red cell count	final red cell count	difference in red cell count	initial specific gravity	final specific gravity	difference in specific gravity
236	4.48	4.45	-.03	1.008	1.018	+.010
153	4.65	4.65	.00	1.008	1.016	+.008
476	4.45	4.44	-.01	1.016	1.019	+.003
664	4.45	4.35	-.10	1.003	1.005	+.002
336	4.55	4.65	+.10	1.010	1.010	.000
088	4.60	4.62	+.02	1.020	1.018	-.002
602	4.40	4.40	.00	1.013	1.010	-.003
292	4.45	4.41	-.04	1.021	1.018	-.003

Figure 7
comparison of morning urinary specific gravity before and after posterior pituitary extract in female patients in whom the erythrocyte count after therapy migrated up or down toward 4,500,000 per cu. mm.

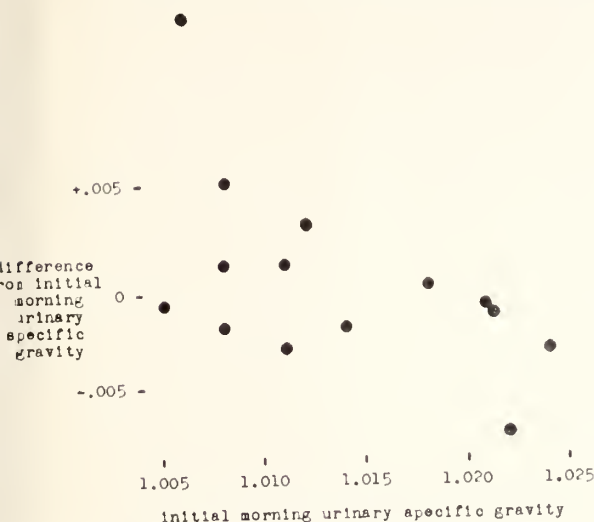
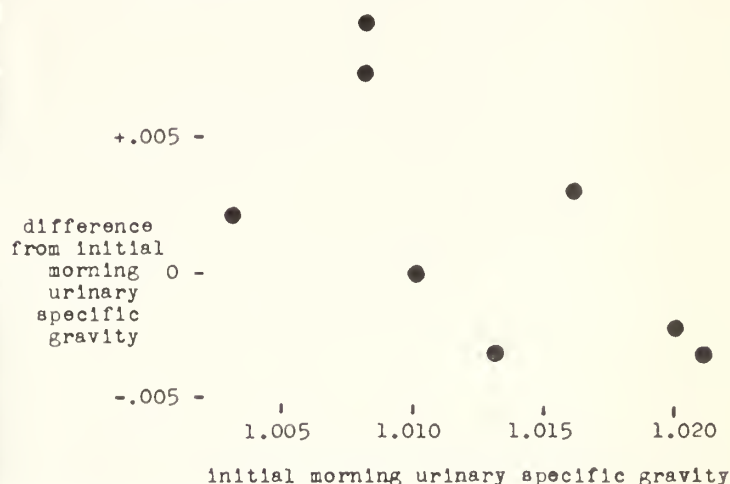


Figure 8
comparison of morning urinary specific gravity before and after posterior pituitary extract in female patients in whom the erythrocyte count after therapy migrated away from 4,500,000 per cu. mm.



physiologic erythrocyte count in the two sexes is different; 5,000,000/cu. mm. and 4,500,000/cu. mm. for the male and female respectively.

4. The observed changes are not significantly different in the two sexes, in those with small (gr. 1/800) versus relatively large (gr. 1/400) doses, and with difference in duration of therapy (3-4 versus 5-27 days).
5. Presumptive evidence is offered to indicate changes in urinary specific gravity in parallel with the alterations in the erythrocyte count.

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Comparison Of A Rapid Bedside Blood Glucose Method With Two Clinical Laboratory Blood Glucose Methods

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Many occasions arise in which the rapid estimation of the blood sugar level would be of considerable value to the physician in the diagnosis and treatment of disease. Moreover, such a method would be helpful in the management of diabetes mellitus in the office as well as in instituting therapy for diabetic coma or insulin shock. Until recently the available methods of rapid blood sugar determination have been unsatisfactory. In 1954, a method was proposed¹ which appears amenable to use by the physician under a va-

riety of circumstances.²⁻¹² In order to compare this newest technique, commercially available as Dextrotest[®]*, with accepted methods, blood sugar levels were determined by Dextrotest, Somogyi-Nelson, and Technicon AutoAnalyzer methods on the same blood samples.

Method

Ten milliliters of venous blood were withdrawn from 89 fasting patients in the University of Alabama Medical Center Diabetic Clinic. A 5 ml. aliquot was added to a tube containing 7 mg. of calcium disodium ethylene diamine tetra-acetate from which samples were taken for determination of sugar by the Dextrotest[®] and the Somogyi-Nelson technique. A 2nd five ml. aliquot was added to a clean test tube, allowed to clot and the serum removed for analysis by the autoanalyzer.

Mr. Strong is a recipient of Predoctoral Fellowship in Metabolism of the National Institutes of Health. Dr. Boshell is assistant professor of medicine, Medical College of Alabama, and clinical investigator at the Veterans Administration Hospital, Birmingham, Alabama. From the division of metabolism and endocrinology, the department of medicine and University Hospital, University of Alabama Medical Center and Medical Service, Veterans Administration Hospital, Birmingham, Alabama. This study was aided in part by Grant A-3069 from National Institute of Arthritis and Metabolic Diseases of the National Institutes of Health, Bethesda, Maryland.

*Ames Company, Elkhart, Indiana

A Dextrotest® kit contains one test tube calibrated with 2 ml. and 3 ml. lines (Tube "P") and a second tube flared at the top to hold a filter paper cone (Tube "S"). The kit also contains filter paper, a tablet "P" containing sulfosalicylic acid and sodium bicarbonate, and tablet "S" containing copper sulfate, sodium hydroxide, sodium bicarbonate, and citric acid. Tablet "P" is added and allowed to dissolve. Freshly drawn or anticoagulated blood is added to the 3 ml. mark and the mixture is vigorously shaken. The resulting mixture of precipitated proteins is then poured onto the filter paper and the clear filtrate is collected to the 1 ml. mark in Tube "S". Tablet "S" is then added to the filtrate and after cessation of boiling, the tube is gently shaken three or four times. Thirty seconds later, the mixture is compared with the supplied color scale. A blue color represents a blood sugar level of 100 mg. per cent or less; a green color, 150 mg. per cent; and a brown color 200 mg. per cent or more. Levels intermediate between 100 and 150 mg. per cent, and 150 and 200 mg. per cent may be estimated. Blood sugar levels greater than 200 mgs. per cent may be determined by further dilution of the blood.

Certain precautions must be taken in the performance of this test to insure maximum accuracy. Tube "P" must be shaken thoroughly after the addition of blood to insure complete deproteinization; incomplete deproteinization or leakage of the precipitate into Tube "S" results in development of a muddy color which is difficult to interpret. Moreover, Tube "S" must be shaken briefly but thoroughly after boiling ceases and read promptly in 30 seconds or optimal color will not develop. Serum glucose determinations utilizing the potassium ferricyanide-potassium ferrocyanide oxidation-reduction reaction were performed in the Technicon AutoAnalyzer at a rate of 40 determinations per hour.^{13,14}

Duplicate analyses of each specimen were performed by the Somogyi-Nelson method.¹⁵

Results

Table 1 contains blood sugar levels within the range of 100 to 200 mg. per cent obtained by the AutoAnalyzer technic. The corresponding values determined by the Dextrotest® and Somogyi-Nelson methods are included. Lower values are observed with the Somogyi-Nelson technic since this method measures "true" blood glucose rather than total blood reducing substances as do the former methods. Allowing for a 20 mg. per cent lower value obtained with the Somogyi-Nelson method essentially no difference in the mean values and standard deviations of all three methods was observed. Further statistical analyses of this group revealed excellent correlation of values obtained with the Dextrotest® with both the Somogyi-Nelson technic ($r=0.793$) and the AutoAnalyzer method ($r=0.903$). A high degree of correlation ($r=0.802$) was observed between the values determined using the Somogyi-Nelson and AutoAnalyzer methods.

Of the remaining 40 blood specimens measured by the AutoAnalyzer technic, four were found to contain less than 100 mg. per cent of glucose. Although proportionately low Somogyi-Nelson values were observed, the glucose levels using the Dextrotest® method could only be estimated as 100 mg. per cent which is the lower limit of this method. Thirty-six samples had glucose levels greater than 200 mg. per cent by the AutoAnalyzer technic. Twenty of these specimens evaluated by the Dextrotest® method were interpreted to contain at least 200 mg per cent glucose, the upper limit of this method without resorting to further dilution, while the 16 remaining samples were graded between 150 and 200 mg. per cent.

Discussion

The results in the present study indicate that blood sugar estimations performed with the Dextrotest® method compare favorably in accuracy within the range tested with both the Somogyi-Nelson and AutoAnalyzer methods. In view of the closely approximated means and high coefficients of correlation be-

COMPARISON OF GLUCOSE METHODS

TABLE 1

A.A. Mgs. %	D.T. Mgs. %	S.N. Mgs. %
101	100	67
104	125	80
111	100	94
111	110	87
111	110	97
111	130	112
115	105	100
116	100	86
116	125	96
116	125	116
114	125	98
126	130	126
126	140	114
127	100	104
127	125	100
131	125	99
131	125	115
131	130	124
134	120	96
135	130	107
141	140	119
142	155	118
143	105	115
147	150	118
148	135	155
148	150	116
148	150	131
152	150	123
153	130	132
154	150	139
155	150	108
156	150	112
156	150	133
161	125	102
161	150	152
162	150	127
165	150	143
168	180	157
173	150	148
182	200	184
186	150	145
186	175	114
186	175	149
187	150	168
190	175	164
191	160	100
194	175	174
195	175	134
200	200	167
MEAN	148	141
Std. Dev.	25	22

A.A.=AutoAnalyzer

D.T.=Dextrotest

S.N.=Somogyi-Nelson

tween the three methods, there appears to be but a relatively small difference in determining blood sugar levels within the 100 to 200 mg. per cent range by the Dextrotest® method.

While it is not suggested that blood sugar levels may be determined by this newest method in preference to currently acceptable clinical laboratory methods, this procedure does offer a rapid, simple, inexpensive and accurate method of estimation of blood glucose levels between 100 and 200 mg. per cent. Moreover it will indicate rapidly and with simplicity blood glucose levels over 150 mg. per cent.

The superiority of this test is in its application to the emergency ward situation where rapid quantitation of blood glucose levels is important. It is especially useful in the management of the patient with diabetic coma where frequent blood glucose determinations are required to gauge insulin requirements. Its usefulness at the bedside, as well as in the large diabetic outpatient clinic is obvious. It should be of special value to the physician who does not have laboratory facilities in his office.

While the circumstances of blood sugar determination in this present communication limited the investigation of this method to comparison with other methods of determination within a narrow range of values, further modification will allow a wider degree of quantitation. We feel that this test is useful and deserves an equal place with other classic bedside procedures.

Summary

Eighty-nine blood specimens were analyzed for glucose by the Somogyi-Nelson, Auto-Analyzer and Dextrotest® methods.

The accuracy of the Dextrotest® method is, in our experience, sufficient to warrant its use as a valuable bedside procedure under a variety of clinical circumstances.

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COMPARISON OF GLUCOSE METHODS

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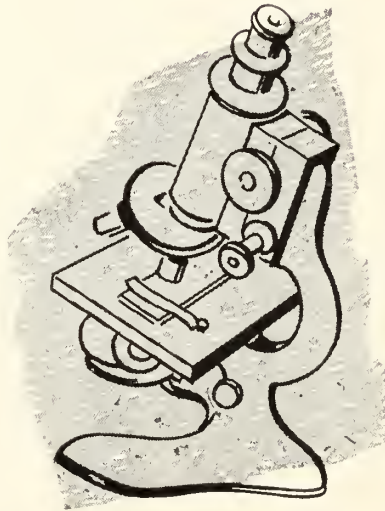
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A Non Parasitic Hepatic Cyst Treated By Marsupialization

JOSEPH P. MUDD, JR., M. D.

Jackson, Alabama

A twenty-seven year old Negro female was admitted to Jackson Hospital with a chief complaint of pain in the upper right quadrant of the abdomen. Initially there had been discomfort during the morning and she completed the day's domestic work prior to reporting to the hospital. A regular lunch had been eaten after which pain increased and tenderness developed in the gall bladder region. She had noted a mass in the right hypochondrium and a diagnosis of cholecystitis was entertained.

Only a sketchy history could be obtained. There had been no prior nausea, vomiting, or melena; and she had felt well and maintained a good appetite until the day of admission. The major physical finding indicated a large, soft, cystic mass filling the right flank, right abdomen, and upper pelvis. There was minimal tenderness of the mass in the gall bladder region. Examination of the chest, rectum, and pelvis disclosed only an elevation of the right diaphragm. The urine contained many leukocytes but was otherwise normal. The peripheral blood leukocyte count and hemoglobin determinations were normal. The bromsulphalein retention was 2.8 per cent in 45 minutes, urea nitrogen 9.0 mg. per cent, and the prothrombin time was 16.5 seconds.

An intravenous pyelogram indicated mild obstructive hydronephrosis of the right kidney and a normal left kidney. The right ureter was displaced posteriorly over a length of 7 to 8 cm. Upper gastro-intestinal X-rays indicated displacement of the duodenum to the left and the colon downward. The radiologist was uncertain as to whether the mass was retroperitoneal or intraperitoneal. Of the many possibilities, that of a cyst of the liver was overlooked.

An exploratory celiotomy with the right ureter catheterized revealed a huge mass, cystic to the touch, and without clear demarcation as to where normal liver tissue began. The mass appeared to be a rounded continuation of the right lobe of the liver. Adhesions about the cyst were absent, it pressed tightly about the pelvic inlet, and it was with difficulty that the hand could be inserted between the mass and the ureter at the brim of the pelvis.

To resect the mass appeared dangerous as it was of such a size that it could not be delivered into the wound. Aspiration of 1700 cc of odorless brown fluid contents permitted delivery of a portion of the softened cyst into the wound. This portion of the cyst was marsupialized and a sump suction drain inserted along with light packing. Digital exploration of the cyst revealed irregular canyons within. An effort was made to avoid spilling the contents of the cyst into the peritoneal cavity.

A study of material from the cyst failed to reveal evidence of parasites and it was sterile upon culture. A portion of the wall of the cyst and sediment there from was examined and the pathologist reported "cyst of liver, type undetermined, probably congenital."

The post operative course was uneventful. Prior to discharge from the hospital on the ninth post operative day, dilatation of the right urinary tract was not evident on pyelograms. A mucous sinus persisted for five months at the site of marsupialization and then healed. This sinus was small, admitting but a probe, and required an occasional small dressing. Physical examination four years after surgery did not disclose abnormalities or a return of the cyst.



Editorials

FIRST DIXIE POSTGRADUATE ASSEMBLY

One of the South's largest and most comprehensive postgraduate medical assemblies will be conducted in Birmingham this month by the Alabama Academy of General Practice.

The Academy and its host chapter, the Jefferson County Chapter, are to be congratulated on undertaking a three-day meeting and on arranging such an outstanding program which will feature a speaking faculty comprised of sixteen nationally recognized physicians in various specialties.

The First Dixie Postgraduate Assembly will be presented at the Dinkler-Tutwiler Hotel on Wednesday, Thursday, and Friday, July 12-14. Registration will begin Wednesday morning in the lobby of the hotel. There will be no registration fee.

One of the outstanding features of the Assembly will be the delivery of the seventh James S. McLester Lecture on Friday morning. The lectureship was established in 1954 in honor of the late Dr. James Sommerville McLester, one of Alabama's most distinguished medical leaders.

Dr. McLester, a former professor and chairman of the department of medicine at the Medical College of Alabama, served as president of the Medical Association of the State of Alabama in 1920 and was president of the American Medical Association in 1935.

This year's lecture will be given by Dr. James T. Grace, Jr., assistant director of the Roswell Park Memorial Institute in Buffalo,

New York. Dr. Grace, a native of Troy, Alabama, was graduated from Yale University, attended the Medical College of Alabama, and received his medical degree from Harvard Medical College.

Dr. Grace, a former student of Dr. McLester, is chief cancer research surgeon and chief of the gastrointestinal and soft tissue services at Roswell. He will lecture on the latest developments in cancer research.

A lecture on "Carcinoma Of The Stomach" will be given Thursday, July 13, by one of the South's most prominent physicians, Dr. Alton Ochsner, president of the Alton Ochsner Medical Foundation Hospital in New Orleans.

Other distinguished speakers appearing on the program are Dr. Maurice Scurry, Dallas, Texas, "Strokes and Heart Attacks"; Dr. Robert Yoe, assistant professor of clinical medicine, Medical College of Alabama, "Medical Aspects of Cerebrovascular Disorders"; Dr. W. Sterling Edwards, associate professor of surgery, Medical College of Alabama, "Diagnosis and Management of Thrombophlebitis and its Sequelae"; Dr. J. Garber Galbraith, associate professor of surgery, Medical College of Alabama, "Surgical Aspects of Cerebrovascular Disorders"; Dr. Robert B. Greenblatt, professor of endocrinology, Medical College of Georgia, "The Surgical and Endocrine Management of Endometriosis"; Dr. Thomas F. Frist, associate professor of clinical medicine, Vanderbilt University School of Medicine, "Thoracic Disc Syndrome"; Dr. Harry C. Shirkey, director of Children's Hospital in Birmingham, "Medical and Surgical Aspects of Poisoning in Children."

Dr. Philip Thorek, Chicago, "The Pancreas and the Practitioner"; Dr. J. W. Crookshank, medical director of Cities Services Refining Corporation's Lake Charles plant, "The Lumbar Spine and the Workman"; Dr. Neill K. Weaver, medical director of Esso Baton Rouge Refinery, "The Cardiac in Industry"; Dr. Lloyd M. Nyhus, associate professor of surgery, University of Washington School of Medicine, "Inguinal Hernia Repair By Pre-Peritoneal Approach"; Dr. Samuel B. Nadler, New Orleans, "The Use of Radioactive Iodine in Thyrotoxicosis"; Dr. George A. Constant, Victoria, Texas, "Psychiatric Disorders in Teenagers"; Dr. J. Elliott Scarborough, director of Emory University Clinic, "Moles and Melanomas."

OPERATION COFFEE CUP

Members of the Woman's Auxiliary are quite busy these days entertaining their friends and neighbors at coffee parties. These aren't the usual chit-chat parties where our wives discuss the latest in fashions and gossip over a cup of coffee.

Our wives are giving the parties to enlighten their acquaintances of a crucial issue facing America today—namely, socialized medicine.

The nation-wide project is called Operation Coffee Cup, and here is how it works. Your wife receives a record made by film star Ronald Reagan and a copy of the leaflet "Medical Aid for the Aged." After listening to the record which effectively expresses Reagan's own views about the dangers of government in medicine and studying the leaflet, she invites her lay friends over for a cup of coffee and plays the record for them. She tells them briefly why she wanted them to hear the record and states her case against legislation like the King bill. She points out that in the next few months Americans will decide whether or not this nation wants socialized medicine . . . first for its older citizens, then for all its citizens. She provides her guests with stationery, pens, and stamped envelopes and urges each guest to write to her senators and congressmen ex-

pressing their own reasons for opposing the King bill and similar legislation.

CARDIAC MASSAGE

External cardiac massage, a recently developed technique for restarting hearts which have stopped beating—without opening the chest—is the subject of a new medical teaching film released recently by Smith Kline & French Laboratories.

The film, entitled "External Cardiac Massage," shows how the technique substitutes externally applied pressure for the rhythmic contractions of normal heart muscle, thereby maintaining circulation at a level sufficient to sustain life.

The technique, which has been termed "strikingly effective," may well revolutionize the concept of reviving hearts that have failed. In more than one hundred cases of cardiac arrest treated by this method at Johns Hopkins Hospital, 62 per cent were successfully resuscitated to their previous cardiac and central nervous system status.

If external cardiac massage, combined with assisted ventilation, is begun within four minutes after cardiac arrest, the central nervous system will receive enough oxygen to prevent serious damage.

An animated sequence in the film illustrates how manual depression of the lower sternum compresses the heart, forcing blood into the pulmonary systemic vessels. Release of the pressure allows the chest to expand and the heart to fill again.

"External Cardiac Massage" shows the steps to be taken to resuscitate patients when heart arrest or ventricular fibrillation occurs, both within and outside the hospital. The film also distinguishes between heart arrest and ventricular fibrillation, illustrates the use of the external fibrillator as part of the resuscitation technique, and demonstrates the application of the technique to infants and children.

The 21 minute, color and sound film is available on a free-loan basis from local rep-

representatives of the Philadelphia pharmaceutical firm.

CANCER GRANT

Based on the findings of recent studies at the University Hospital and Hillman Clinic, the National Institutes of Health has awarded Dr. Edmund A. Dowling, assistant professor of pathology at the Medical Center, a two-year grant to conduct further studies of endometrial carcinoma detection with the jet spray washer developed by Dr. L. Clark Gravlee of Birmingham.

FOOD POISONING

An estimated 100,000 to 150,000 cases of food poisoning occur annually, according to a report in **Patterns of Disease**. Principal known contaminants are staphylococci and salmonellae.

Certain foods are more bacteria-prone than others. Poultry, meats, custards, and salads are particularly susceptible targets for those bacteria which cause food poisoning. And quick freezing of foods is not an effective safeguard since the bacteria may well survive the process. According to the report, salmonellae, staphylococci, and streptococci may remain viable even after ten weeks in food substrates frozen at -30C.

The report stated that although not all food-poisoning cases in this country are reported, available figures clearly indicate that public eating establishments and private homes have a higher number of outbreaks than, for example, private clubs and colleges.

Bacteria, moreover, play the major role not only in food poisoning but also in diarrheal disease generally, at least in those forms which are infectious and not due to such non-infectious agents as emotional crises and strains. Of all infectious agents the organism shigella is considered the principal pathogenic agent where incidence of diarrhea is high. Of the reported cases of diarrheal disease during 1959—12,796 were shigellosis, 6,604 were salmonellosis, and 3,482 amebiasis.

Curiously enough, however, though shigel-

la and salmonella cause most of the diarrheal diseases in this country, they cannot be blamed for that baffling diarrhea that afflicts so many American tourists abroad. Studies conducted among Americans in Mexico found neither responsible for travelers' diarrhea; nor could parasites such as ameba, trichomonas, or giardia, be incriminated in cases of diarrhea of travelers in Europe. The report suggests that further study of the role of viruses and staphylococcus toxin may throw some light on the mystery of travelers' diarrhea.

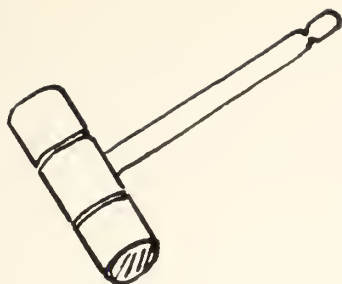
Moreover, though bacteria like shigella and salmonella may top the list of causes of diarrheal disease in this country, there are a wide variety of other causes. Among newborn babies, for instance, certain types of coliforms have been found to be the leading cause of diarrhea.

Intestinal parasites, reported in one survey to affect as many as 26 per cent of the population, are another possible cause. Parasitic infection may well be the cause of diarrhea especially in patients who have been in endemic areas or who experience diarrhea for prolonged periods of time.

Too, viruses may play a key role. The importance of viruses in the etiology of diarrhea has only recently been recognized, the report says; but certain viruses, for instance, were found in one study of children to be six times greater in those with diarrhea than in those without.

POISON CONTROL CENTER

The newly established poison control information center in the Children's Hospital in Birmingham is now operating 24 hours a day, according to a recent announcement by Dr. Harry C. Shirkey, director. Physicians wishing information regarding accidental poisoning may telephone Fairfax 28501 or Alpine 26901 any hour of the day or night. The poison control center, the only one in Alabama presently, is affiliated with the National Clearinghouse for Poison Control Centers in Washington, D. C.



President's Page



Many years ago, at the time when the prevalent method of heating was the open grate, I remember hearing my mother tell the young house boy that the philosophy of making a fire was to put the kindling on top. A few days later she found the fire laid with kindling on top and on the bottom. When he was asked if he had not been told the correct philosophy of fire-making, his reply was: "Yes, ma'am. I put some kindling on top for the philosophy of the thing and some under the bottom fer to make it burn!" This homely incident often may be pertinent to current medical activities. Certainly we are interested in maintaining the tried and proved principles of personal practice. Some concrete performances may keep the fires burning.

As the Legislature remains in session, the problem of medical care, particularly for the indigent, calls for solution. It is imperative that physicians make an effort to impress upon their friends in the law-making bodies that provision for democratic and personal care for every sick individual is their responsibility. Those who are able to pay their own way need the recognition of this need, as well as those who are indigent. Adequate support for the training of all required medical and para-medical personnel is also the definite responsibility of those who represent us in government. We can all do more to encourage a better understanding in this area of legal authority. During the next few weeks we must all keep in mind this effort

—not to fight certain unpleasant measures so much as to create the interest and responsibility in the minds of our representatives.

The Salk vaccine has been well publicized, but far too large a percentage of our population is still unprotected against the assaults of poliomyelitis. There have been some differences of opinion about the preparation of the vaccine, the inclusion of small amounts of penicillin, for example. Yet the experience of the past five years has shown that very few untoward incidents have arisen. The production of immunity to paralytic polio has been high. It would seem that the public would be very eager to secure the very slightest help in conquering this disease, but we know this eagerness has not been evident. It is necessary that we urge the use of this vaccine by every one under forty years of age at least. Personal influence on our patients; support of public health efforts; community projects for spreading information; more specifically, interest in the efforts of our committees on rural health—all these will be things that we can do "fer to make this fire burn."

John W. Simpson, M. D.



ORGANIZATION SECTION



Dr. William E. White, newly appointed chairman of the Committee on Legislation (left) discusses proposed bills with Dr. H. N. Carmichael of Fairfield (standing) and Dr. E. B. Glenn of Birmingham, the two new members of the Committee appointed by President John W. Simpson.



Representatives of the Alabama and Florida Departments of Public Safety (left to right) Lt. T. L. Payne and Major Bankhead Bates of Alabama and Capt. C. W. Keith, Lt. J. A. Pickens, Cpl. J. W. King (standing) of Florida are shown above discussing highway safety problems with Dr. W. E. White.

Proposed Legislation Aired at Meeting

Proposed state and national legislation on medical care for the aging, progress and implementation of the Kerr-Mills Law, highway safety, and the Anderson-King bill were among the topics discussed by the Committee on Legislation at its meeting on Sunday, June 17, at the Association's headquarters building in Montgomery.

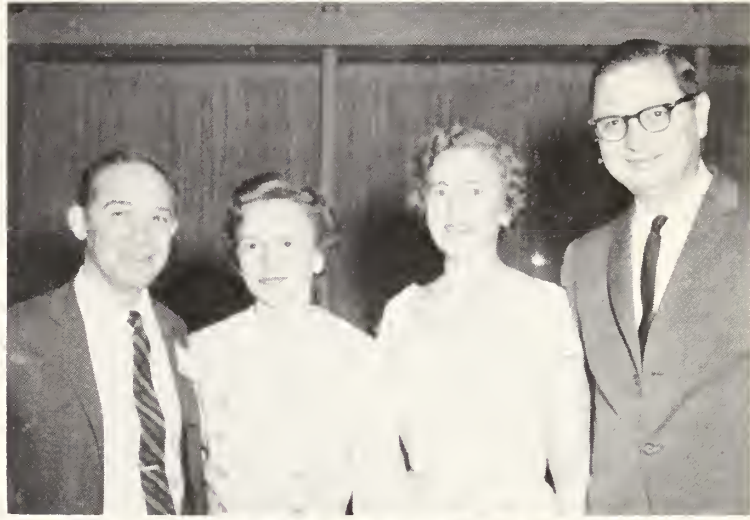
Attending the meeting which was conducted by the newly appointed chairman of the committee, Dr. William E. White of Aniston, were committee members, congressional legislative key men, and representatives of the Alabama and Florida Departments of Public Safety. Included in the group were the President, Dr. John W. Simpson; the President-elect, Dr. M. Vaun Adams; Board of Censors members, Dr. Paul W. Burleson; committee and key members Dr. T. E. Bridges, Dr. H. N. Carmichael, Dr. W.

A. Daniel, Dr. D. G. Gill, Dr. E. B. Glenn, Dr. C. A. Grote, Sr., Dr. E. L. McCafferty, Dr. W. L. Smith, Dr. E. L. Strandell; Alabama Safety Department representatives, Major Bankhead Bates and Lt. T. L. Payne; and Capt. C. W. Keith, Lt. J. A. Pickens and Cpl. J. W. King of the Florida Department of Public Safety.

The Florida delegation explained to the committee the organization and functions of the Medical Advisory Committee to the Florida Department of Public Safety. The Alabama officers requested that a compatible program be instituted in Alabama. The committee appointed a sub-committee composed of Dr. W. L. Smith, Chairman, Dr. T. E. Bridges, and Dr. E. B. Glenn, to study the request.

The State Health Department's request for funds was endorsed by the committee.

Candid Camera At Annual Session





ASSOCIATION FORUM

PRIZE WINNING ESSAY

AMERICA'S HEALTH—OURS TO PRESERVE

Mary Rissie Bass

Once in a far away land there lived a magnanimous little robot named Gobie. One day a fairy appeared before Gobie and whispered in a charming voice, "Gobie, Gobie, to reward you for being so kind, I am going to give you a gift; but, Gobie, you must use this gift wisely." Suddenly, Gobie felt himself change. He had been granted a sound mind and a healthy body! As the fairy disappeared, Gobie heard her say, "If you use this gift wisely, Gobie, you shall have it forever."

Gobie was overjoyed. He rushed out into the world and laughed and played and cried—just like any other young boy. In spite of the good fairy's warning, Gobie stuffed him-

self with sweets; he stayed up late at night; he left his coat unbuttoned in the cold wind; he did many things detrimental to good health.

Before Gobie knew what was happening, his gift had begun to fade away. And when he did realize what he had done, he thought frantically, "What can I do? What can I do?" Alas, it was too late.

One morning Gobie awoke to find himself nothing but an old worn out robot, and he was melted that very afternoon for scrap iron.

Gobie was granted a great gift—the gift of life! Like many people, Gobie did not care for this gift as he should; he enjoyed it for only a short time.

There are, unfortunately, too many people who, like Gobie, are wrapped up in today's

Miss Bass, winner of this year's essay contest, graduated from Holtville High School this year. She was presented a check for \$100.00 at the annual session in April when she read her paper to the membership.

pleasures. These sensualists give little thought to the possible wheel chair tomorrow; or in more drastic cases, a quicker death. The average American is born with the life expectancy of 69½ years. In the rapid pace of today's world, that is not very long; even more reason for giving meticulous care to the preservation of our minds and bodies.

We live in a close society in which we are dependent upon one another. Most people do not realize that when they mistreat themselves, they are imperiling not only their lives but the lives of any number of persons.

Not everyone, of course, is born with the same possibilities for strength and health and vigor. We can, however, with a few common sense rules, attain the fullest realization of the potentialities that we possess.

More than 1,000,000 Americans, it is estimated, die each year of chronic diseases; and, moreover, 25,000,000 Americans suffer from some disabling or nondisabling chronic disease. This is tragic, for many of these ailments would have been cured had they been detected early. Despite the fact that medical and health authorities have encouraged regular checkups, our citizens do not seem to have the time to "waste" a few hours that could save days. There prevails the "it can't happen to me" attitude.

The human life is the most valuable natural treasure in the world. Almost everything we do is somehow related to keeping ourselves alive (that is, those of us who look forward to longevity). We are constantly seeking food, shelter, security, and happiness. Yet, we are not satisfied with these aims; we seek more and better quality. Accordingly, we must grow and improve. Of all the assets a country has, the greatest is a healthy population. Like a person, a nation whose citizens are not healthy cannot be efficient and happy.

According to the American Hospital Association report, during 1958 one out of every eight persons—nearly 22,000,000 people—were admitted to hospitals. Think of the time lost there! How much of that time could

have been saved for useful service had these people, and even the people around them, been a little wiser in their personal care.

We Americans take good health for granted. We do not seem to realize the time, money, energy, and happiness that could be saved if we observed more often the simple basic health rules that we are taught from the cradle up. In the year 1958 alone the American public spent 16½ billion dollars for medical care. Imagine what the aggregate number would be if we included government appropriations, which in 1959 was \$756,361,208 for the Public Health Service, and the expenses of private organizations.

Five hundred years ago the average person could expect to live only thirty years. Now we can expect another 39½ years, and it is certain a time will come when a person can expect to be at least 100 years old.

What are you doing to add to the longevity of the American people? Now is the time to start and the place is with you and me. Good health is each person's responsibility. Through the wise use of our faculties and our conveniences, America's health is OURS to preserve.

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MEDICAL CENTER NEWS

SENIOR CLASS HONORS DR. SARA DAVIS

Dr. Sara Davis, professor in the department of pediatrics, has been named recipient of the 1961 Dido Award for her patience, understanding, and consideration for the students of the Medical College of Alabama. The award is given annually to a full-time faculty member by the senior class. Julius Dunn of Wetumpka, president of the senior class, made the presentation. Dr. Davis has been on the teaching faculty at the Medical Center since 1953.

DEDICATION OF NURSING RESIDENCE

Groundbreaking ceremonies for the two million dollar University Hospital School of Nursing Residence were held recently at the Medical Center.

At the dedication, University of Alabama President Frank A. Rose, cited this event as typical of the progress of the Medical Center and its contribution to the health of all citizens. When the nine-story modern building is completed in 1962, enrollment can be increased from the present 169 to 400 students, he said.

Administrator Matthew F. McNulty, Jr., called attention to the contribution made by citizens, public officials, and professional people alike in the fulfillment of this major need for adequate educational facilities designed to help meet the shortage of nurses. He recalled the passage of Amendment No. 4 in 1957 through which \$750,000 was made available by statewide referendum. Matching Hill-Burton funds of \$1,250,000 became available last year, he pointed out, and definite plans were completed.

DR. BARRETT RECEIVES DIABETES FELLOWSHIP

The American Diabetes Association has awarded Dr. James Cole Barrett, resident physician in internal medicine, a research fellowship to continue his investigative work in diabetes mellitus. Dr. Barrett will give a report of his studies in resistant diabetes at the American Diabetes Association annual meeting in New York City the week of June 22.

MEDICAL SCHOOL RECEIVES GRANT

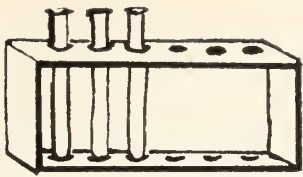
The National Fund for Medical Education has awarded the Medical College of Alabama \$32,880 for support of its teaching budget, according to an announcement by L. M. Barger-on, chairman of the fund's Birmingham Committee.

The grant, the 10th made by the fund to the Medical College, brings to \$275,435.25 the total given since the fund's first grant was made in 1951.

Eighty-four other medical schools received grants totaling more than three million dollars, making the fund's total grants to medical schools over 25 million dollars.

Barger-on pointed out that the fund's grants were made possible by contributions from about 1,940 corporations, firms, and foundations from over the country. In 1960, eight Birmingham companies gave \$4,900.

In addition to the \$32,880 the Medical College of Alabama also received during the year the sum of \$7,500 for support of basic research under the fund's medical research program.



STATE DEPARTMENT OF HEALTH

MEDICAL RESEARCH

Each year the National Health Education Committee publishes a report, "What Are We Spending to Save Our Lives Through Medical Research?" The report compares medical research expenditures of the National Institutes of Health, U. S. Public Health Service, with expenditures for other necessary programs of the federal government. Amounts expended for research by other agencies are included.

The importance of medical research to our economy is illustrated by the National Health Survey estimate that 599.1 million days were lost from work because of illness or injury by all persons 17 years and older during the year July, 1957-June, 1958. Based on a minimum daily wage of ten dollars (eight hours at \$1.25 per hour), these 599.1 million days of lost work represent a decrease in earnings by those unable to work totaling almost six billion dollars.

The brochure emphasizes the toll taken each year by such dreaded killers and crippers as heart disease and strokes, cancer, mental illnesses, arthritis and metabolic disease, the neurological and blinding eye diseases. It shows the lives lost, the disability, costs of care, and lost income. These costs are contrasted with what Americans spend annually for such personal indulgences as chewing gum, cosmetics, and tobacco. For example, the NIH budget for fiscal 1961 was 560 million dollars. We spend more than half that amount for chewing gum alone each year.

Medical research which has paid off as an investment in lives and dollars is illustrated dramatically in a special section, "Medical Research Payoffs." These payoffs include development of the Salk vaccine; the development and use of tranquilizers and other drugs, including psychic energizers, in mental illness; and the development of oral-di-

abetic compounds. Medical research has saved 2,230,132 lives since 1944.

A second recently published pamphlet, "The Costly Time Lag," prepared by the U. S. Public Health Service looks at medical research from another angle—our failure to make full use of the knowledge we have acquired through research and the cost of this failure. Unnecessary deaths and handicaps continue to occur because the knowledge gained from research is not translated into action.

This publication also cites the development of the Salk vaccine as a striking example. "Vaccination reduces the risk of polio by 90 per cent. Whereas 20,000 to 60,000 polio cases used to be reported every year, the number has been well below the 10,000 mark ever since 1956 when adequate supplies of vaccine first became available.

"But as long as millions of others, particularly infants and small children in low income families, remain unvaccinated or only partially vaccinated, new cases and new epidemics can be expected."

As to the cost of our failure to use knowledge: "The typical polio cripple of the post-vaccine period is a child less than five years of age in an underprivileged family. It is unlikely the family will ever be able to pay for the child's medical care and rehabilitation or that the child will be able to support himself when he grows up. Therefore these polio cripples will cost thousands of tax and charity dollars in the years ahead." It must be added the cost in human suffering cannot be reckoned.

These two publications are interesting particularly when read together. The first underscores the importance of adequate financial support for medical research. The second shows we do not get full value from our research dollars unless we find means to reduce the time lag between discovery and use of new health measures.

DEPARTMENT OF HEALTH

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	April	May	*E. E. May
Tuberculosis	111	143	216
Syphilis	95	117	163
Gonorrhea	319	327	368
Chancroid	2	0	6
Typhoid fever	0	0	2
Undulant fever	0	0	1
Amebic dysentery	7	8	2
Scarlet fever and Strep. throat	54	48	49
Diphtheria	0	2	3
Whooping cough	10	9	46
Meningitis	4	4	12
Tularemia	0	0	1
Tetanus	0	1	3
Poliomyelitis	0	0	2
Encephalitis	0	1	2
Smallpox	0	0	0
Measles	519	478	1,717
Chickenpox	364	161	239
Mumps	102	77	270
Infectious hepatitis	225	139	45
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	595	457	532
Pellagra	0	0	0
Rheumatic fever	20	27	9
Rheumatic heart	25	34	14
Influenza	87	26	144
Pneumonia	196	148	218
Rabies—Human cases	0	0	0
Pos. animal heads	9	3	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

May 1961

Examinations for malaria	20
Examinations for diphtheria bacilli and Vincent's	47
Agglutination tests	551
Typhoid cultures (blood, feces and urine)	593
Brucella cultures	2
Examination for intestinal parasites	3,213
Darkfield examinations	6
Serologic tests for syphilis (blood and spinal fluid)	25,473
Examinations for gonococci	1,861
Complement fixation tests	108
Examinations for tubercle bacilli	3,976
Examinations for Negri bodies (smears & animal inoculations)	227
Water examinations	2,432
Milk and dairy products examinations	4,298
Miscellaneous examinations	3,648
Total	46,455

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA, MARCH 1961

Live Births Deaths Causes of Death	Number Registered During March, 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live Births	6,509	4,092	2,417	23.2	23.8	24.2
Deaths	2,375	1,531	844	8.5	10.6	9.0
Fetal Deaths	148	64	84	22.2	20.2	20.6
Infant deaths—						
under one month	111	62	49	17.0	19.2	21.1
under one year	183	91	92	28.1	31.9	31.6
Maternal deaths	6	2	4	9.0	4.4	8.3
Cause of Death						
Tuberculosis, 001-019	20	11	9	7.1	8.7	11.3
Syphilis, 020-029	7	3	4	2.5	1.1	1.8
Dysentery, 045-048						
Diphtheria, 055	1	1		0.4	0.4	
Whooping cough, 056						1.1
Meningococcal infections, 057	1		1	0.4	0.7	
Poliomyelitis, 080, 081						
Measles, 085	3	1	2	1.1	1.4	0.4
Malignant neoplasms, 140-205	272	202	70	96.9	108.6	113.5
Diabetes mellitus, 260	43	26	17	15.3	18.0	11.7
Pellagra, 281	1	1		0.4		0.4
Vascular lesions of central nervous system, 330-334	333	186	147	118.6	161.3	121.6
Rheumatic fever, 400-402	2	1	1	0.7	1.1	0.4
Diseases of the heart, 410-443	808	569	239	287.8	351.8	310.7
Hypertension with heart disease, 440-443	156	63	93	55.6	68.2	58.0
Disease of the arteries, 450-456	56	40	16	19.9	26.0	19.0
Influenza, 480-483	15	11	4	5.3	37.5	5.5
Pneumonia, all forms, 490-493	97	58	39	34.6	45.8	28.5
Bronchitis, 500-502	1	1		0.4	4.0	1.5
Appendicitis, 550-553	5	4	1	1.8	1.4	0.4
Intestinal obstruction and hernia, 560, 561, 570	6	4	2	2.1	3.6	3.3
Gastro-enteritis and colitis, under 2, 571.0, 764	3		3	1.1	4.0	1.5
Cirrhosis of liver, 581	17	14	3	6.1	4.7	5.8
Diseases of pregnancy and childbirth, 640-689	6	2	4	9.0	4.4	8.3
Congenital malformations, 750-759	31	21	10	4.8	4.2	6.9
Immaturity at birth, 774-776	24	12	12	3.7	6.7	6.6
Accidents, total, 800-962	148	101	47	52.7	58.5	58.4
Motor vehicle accidents, 810-835, 960	68	49	19	24.2	22.0	23.0
All other defined causes	354	220	134	126.1	141.1	143.5
Ill-defined and unknown causes, 780-793, 795	121	42	79	43.1	50.5	29.2

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

August 1961

No. 2

Prophylaxis Of Tetanus

CHAMP LYONS, M. D., F. A. C. S.

Birmingham, Alabama

The endemicity of tetanus in this region is well established. The Board of Regents has recommended that mass immunization with tetanus toxoid be a part of every program of civil defense. In recent years, the Committee on Trauma of the American College of Surgeons and the American Association for the Surgery of Trauma have formalized a set of principles for prophylaxis against tetanus. Inasmuch as usual practice has been modified in the light of recent developments in this area, it has seemed desirable to review the new recommendations at this meeting.

A most important phase of tetanus prophylaxis is the program of early wound management, emphasizing thorough cleansing and debridement and accepting the principle of

delayed closure for heavily contaminated or late wounds. Specific immunization must be planned on the basis of individual indications. The immunization may be passive or active or both.

Passive Immunization:

Passive immunization is achieved by the injection of tetanus antitoxin. Commercially available antitoxin may be equine or bovine. Inasmuch as these are alien serums, the physician must determine that the danger of tetanus exceeds the danger of anaphylaxis before administering the antitoxin. The basic prerequisites for this decision are:

1. Specific inquiry as to previous serum therapy
2. Specific inquiry as to prior allergic manifestations
3. Skin and eye tests for serum sensitivity

It must be remembered that fatal anaphylaxis may follow serum therapy even when

Dr. Lyons is a graduate of Harvard Medical College and is a member of the American College of Surgeons. He is professor and chairman of the department of surgery at the Medical College of Alabama. Presented at the American College of Surgeons Sectional Meeting in Birmingham, January, 1961.

all of the above are negative. Hence, adrenalin must be immediately available when therapy is given. Some physicians regularly administer adrenalin in oil prior to injection of serum.

Sensitivity to serum correlates with rapid neutralization of antitoxin. Further, if a patient has had a previous injection of horse serum, he may neutralize the antitoxin too rapidly for his protection even though the sensitivity tests are negative. Two premises are validated:

1. Passive immunization cannot be achieved by desensitization.
2. Passive immunization cannot be assumed by a second dose of a foreign serum containing antitoxin.

In general, alien serum, be it equine or bovine, induces a short-lived antitoxic immunity when injected into humans. Tetanus can and does develop after passive immunization, particularly after the first week. A longer duration of passive immunity may be achieved by a larger initial dose of antitoxin. It is now clear that 1,500 units of antitoxin is an inadequate dose for an adult. The recommended dose of antitoxin is 3,000 units for children and 5,000 units for adults, with this dosage being doubled for wounds seen more than 24 hours after injury.

In those instances wherein passive immunization is necessary, and alien serums are contraindicated, recourse to immune human serum is obligatory. The most effective protection is provided by plasma transfusion from a donor who has received a booster dose of toxoid one month previously. An alternative, but less certainly effective source of human tetanus antitoxin, is hyper-immune, or gamma globulin, with the relatively large dose of 0.6 ml./kilo. For individuals in whom passive immunization is uncertain for any reason, penicillin therapy should be given for 10 days, the estimated incubation period of lethal tetanus.

Active Immunization:

The well-known vagaries and hazards of passive immunization underline current emphasis on mass immunization with toxoid. This active immunization is outstandingly protective and fails only in patients with agammaglobulinemia. The toxoid may be alum precipitated or fluid. The alum precipitated has been used chiefly for basic vaccination. Fluid toxoid accelerates the rate of anamnestic recall of antibodies when used as a booster dose, and is acceptable for vaccination as well.

Basic vaccination usually consists of two injections at an interval of one month, with a third dose given six to twelve months thereafter. In the event that the first dose of toxoid is given at about the same time as antitoxin is administered, it is preferable to give three injections at intervals of one month and complete the vaccination with a fourth injection six to twelve months later. Active immunity cannot be assumed until the final dose is given at an interval of six months or more. In other words, if the patient needs prophylactic boosters after the first two injections have been given and prior to the passage of six months, the booster dose does not complete vaccination. If the six months have elapsed from the time of administration of the two basic inoculations, the booster dose becomes the third and final dose of toxoid.

Once this three-dose vaccination has been completed, the patient is adequately protected from tetanus for one year without additional boosters. This effective protection persists throughout the second year to a degree that makes it unnecessary to give booster doses except for a major hazard of tetanus from heavy contamination. This aspect of the duration of complete protection requires emphasis because too frequent use of booster doses induces a sensitization to toxoid with impairment of antigenicity. It is now established that a booster dose every two years is adequately protective for the individual in a tetanus prone occupation.

It is now clear that individuals who have once completed the basic course of toxoid

immunization will respond to a booster dose, no matter how many years have elapsed since the course of basic immunization or the last booster dose. However, as time passes from the last dose of toxoid, there is a slight but definite delay in the time required for antibodies to appear. Hence, when more than four years have elapsed, and the character of the wound indicates an overwhelming possibility of tetanus, it is generally recommended that toxoid be given initially and then, 24 hours later, antitoxic sera be given to protect during the lag period of the response to toxoid. The routine administration of a booster dose every four years guarantees that antitoxic sera shall never be required. The period of safe reliance on booster doses has recently been extended to ten years.

This, then, is a summary of present practice as endorsed by the American College of Surgeons and the American Association for the Surgery of Trauma.

Conclusion:

The salient innovations are:

1. Increase of the prophylactic dose of antitoxin from 1,500 to 5,000 units.
2. Recognition that too frequently repeated doses of toxoid as booster doses are unnecessary and undesirable.
3. Recognition that *only* active immunization satisfactorily fulfills the obligation to protect patients from tetanus.



Idiopathic Hypoproteinemia, Menetrier's Syndrome

MARY J. WARD, M. D.

Humboldt, Tennessee

WILLIAM M. BROCK, M. D., F. A. A. P.

Montgomery, Alabama

This is a case presentation of a two and one-half year old white male with the presenting symptoms of gastroenteritis and the development of a generalized pitting edema without albuminuria. Total protein was found to be 3.7 grams with maintenance of a normal A/G ratio and an albumin drop to 1.4 grams. X-ray of stomach revealed hypertrophic gastric mucosa. Stool tests for albumin were positive.

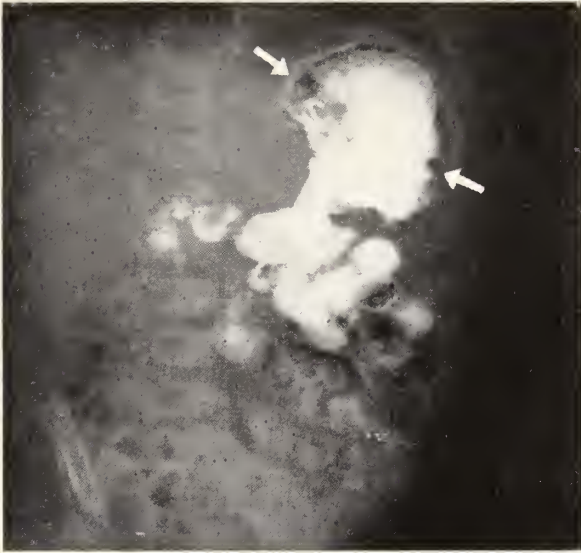
He was treated with whole blood (500 cc) and plasma (750 cc) which was followed by diuresis and loss of 6 pounds of body weight. He was also given ACTH injections during hospitalization.

This case represents primary hypercatabolic proteinemia with loss of albumin in the gastrointestinal tract.

The syndrome of low serum protein oliguria and generalized edema without cardiac, kidney or liver disease or nutritional deficiency is well established. In 1957 Degnan¹ reviewed 27 reported cases of idiopathic hypoproteinemia. He presented an additional case which featured the classic findings and X-ray evidence of hypertrophic gastric mucosal folds. Gross² et al reported that the loss of plasma protein represented either hypercatabolism or external loss (i.e., gastrointestinal exudation). The demonstration of serum protein in gastric contents and stool seems to implicate this method of loss.

Gordon³ et al concluded that "idiopathic hypercatabolic hypoproteinemia" resulted from an abdominal leakage of plasma proteins into the gastrointestinal tract, much as may occur in giant hypertrophy of the gastric mucosa, sprue, regional ileitis and chronic ulcerative colitis. The following case, we believe, falls into the gastric mucosal hypertrophy category.

Dr. Ward is a graduate of the University of Tennessee College of Medicine and Dr. Brock received his medical degree from the University of Virginia School of Medicine. At the time this article was written Dr. Ward was engaged in the private practice of pediatrics in Montgomery with Dr. Brock.



Upper GI Series

Case Report

A two and one-half year old white male, fraternal twin, was admitted to Jackson Hospital on September 16, 1960, with a chief complaint of vomiting and diarrhea for five days. He is one of six siblings, all of whom are healthy. He is the product of a normal pregnancy and had an uneventful growth and development until the present illness. Five days prior to admission he began with nausea and vomiting. He was seen by one of us three days prior to admission, at which time he was given routine treatment for gastroenteritis. His condition failed to improve and three days later he was admitted to the hospital because of persistent nausea and vomiting and several loose green stools.

Course in Hospital

On admission to the hospital he was given subcutaneous fluids. Shortly thereafter it was noted that he had developed edema of his

lower extremities, scrotum, and penis. During the week he continued to have marked nausea and inability to retain fluids. At the end of a week laboratory studies showed that he had markedly low serum protein and he was given a blood transfusion with 500cc of whole blood and 750cc of plasma IV. Shortly thereafter he began to diurese. Weight on admission was 24 pounds; at the end of one week he weighed 30 pounds. He was given Acthargel® in gradually decreasing doses over a period of two weeks. On dismissal he weighed 24 pounds.

Salient Features

1. This is a case of generalized edema in which there was no albuminuria, no liver disease, no evidence of nutritional deficiency, renal or cardiac disease.
2. The upper GI series showed proliferation of the gastric mucosa (refer to picture).
3. Apparently this is a case of primary hypercatabolic proteinemia in which the patient excretes protein through the gastric mucosa as evidenced by albumin in the stool.

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LABORATORY RESULTS

Date	Urinalysis	WBC	Differential	HgI	Hem	CO ₂	Cl	K	Na	Urea N.	TP	Alb	Glob	A/G	Chol.	Tran.	C Floc.	Bact.
9/16	Yellow 1.016 pH 5.0 Alb.—neg. Sugar—neg. Acetone—neg. Micro—neg.	26,800	40% lymphocytes 60% segs	13.5	41%													
9/17		30,900	4% mono. 20% lymphs 73% segs 1% eo. 2% stab	15.2	50%													Throat culture B. hemo Strep.
9/18		23,900	2% monos 19% lymphs 76% segs 3% eos	13.7	45%	18	94	4.4	120	22								Rectal swab E. Coli 0111:B4
9/20		14,350	2% monos 38% lymphs 60% segs	13.7														
9/21	Yellow 1.002 pH 6.0 Alb.—neg. Sugar—neg. Acetone—neg. Micro—neg.							4.9	140	11.5	3.7	2.4	1.3	1.85/1				
9/26	Bence Jones— negative	12,700	54% lymphs	11.7	37%			3.1	130						151	21		
9/27	Yellow QNS pH—5.0 Alb.—neg. Sugar—neg. Acetone—neg. Micro—neg.										3.6	1.4						
9/28																	Neg.	Stool pos. for albumin
9/30		13,300	48% lymphs 51% segs	13.0	37%													
9/30		8,900	1% mono 46% segs 52% lymphs 1% eos															
10/ 3		14,100	55% lymphs 45% segs	14.2	42.5%						5.8	3.7	2.1	1.8/1				
10/18	Yellow 1.009 pH 6.0 Alb.—neg. Sug.—neg. Ace.—neg. Micro—neg.	11,200	83% lymphs 15% segs 2% monos	13.0	39%						4.64	3.02	1.62	2.05/1				

Beacon Lights In Alabama Medicine

In The 1860's

EMMETT B. CARMICHAEL, B. A., M. S., Ph. D.

Birmingham, Alabama

Many Alabamians and several adopted sons have been leaders in organized medicine. In fact, six native sons have been elected president of the American Medical Association and nine have been vice-president of the Association. This paper includes brief sketches about five of these physicians.

William Henry Anderson

William Henry Anderson was born on May 6, 1820, in Richmond, Virginia. His family was a distinguished one for several generations. His grandfather, James Anderson, held the position of King's Armorer but took part in the struggle for independence. His son and the father of our subject, Le Roy Anderson, was a highly cultivated scholar who was educated at William and Mary College. Le Roy was an educator and served as principal

of several female high schools and academies in Virginia. He married Hannah Southgate and three of their sons became physicians, Le Roy, Washington F. and William Henry.

William Henry received his early education at home and entered William and Mary College in 1839 and graduated in 1841. He entered the Medical Department of the University of Virginia and graduated with the M. D. degree in 1842. After graduation he went to Sumter County, Alabama and took over his brother Le Roy's practice for a year. The next six years were spent in training at several cities in the U. S. A. and foreign countries. He first went to the Baltimore Almshouse Hospital for eight months, then he went to Philadelphia for a course of lectures and spent the next year attending a full course of lectures at the University of the City of New York. This gave him an opportunity to have daily visits to Bellevue Hospital. Early in 1846 he went to Europe where he spent about four years studying under such famous physicians as Roux, Velpeau, Magendie and Claude Bernard. He took an eight months' private course with Bernard and prepared to make physiology his specialty.

Dr. Carmichael is professor of biochemistry and assistant dean of the Medical College and School of Dentistry, at the University of Alabama Medical Center in Birmingham. Read at the Fourteenth Annual Meeting of The Alabama Historical Association, Montgomery, April 21, 1961.

William Henry returned to America in 1849 and settled in Mobile where he practiced his profession. He was associated in partnership with Dr. George A. Ketchum from 1853-57. He was one of the projectors of the Medical College of Alabama and along with Dr. J. C. Nott and Dr. George A. Ketchum took an active part in its organization in 1858. When the College opened in 1859, he was Dean of the faculty and Professor of Physiology. The College closed in 1861 due to the war. Dr. Anderson went into the field as surgeon to the 21st Alabama Regiment. After three months service he was detached by the surgeon-general and appointed Medical Purveyor of the Military District commanded by General Braxton Bragg. As Purveyor he imported large quantities of medicine by running the blockade, besides having some half dozen distilleries under his charge, two large potteries, carpenter shops, tin shops, sewing shops and thus furnished and manufactured everything that was used in hospitals in the South. In addition, he bought up tea, liquor and other supplies.

He was stationed first at Dauphin Island and then moved to Oklahoma and thence to Montgomery where he employed at least 500 men in the various enterprises.

After the war Dr. Anderson returned to Mobile and enjoyed an extensive practice. He passed through seven epidemics of yellow fever in Mobile. That of 1853 was the worst and one thousand deaths resulted in a population of 20 thousand.

He also took an active interest in organizing the Medical Association of Alabama in 1847 and is the only one to have been honored by being selected to deliver the annual oration on two occasions, 1851 and 1871. He was president in 1881 and served as its representative to the American Medical Association. He was a member of the American Medical Association and took an active part in its proceedings. He served on the nominating committee in 1851 and as chairman of the Medical Education Committee in 1854 and was elected Vice President in 1881 at the New York City meeting of the Association.

His active professional life allowed him little leisure time for other pursuits but his orations, addresses at commencements, and his various contributions to medical literature bear evidence of a refined and cultivated mind. His practice was chiefly among the elite of Mobile, but he possessed the high regard and warm affection of a large circle of friends. He was unambitious and averse to notoriety.

Dr. Anderson was married in 1851 to Ann Louisa Witherspoon, daughter of Dr. John R. Witherspoon of South Carolina. The Andersons had one daughter.

Dr. Anderson died on November 14, 1887 after serving as Professor of Physiology and Dean of the Medical College of Alabama from its founding until 1885 when he resigned both positions due to ill health. The Physicians Certificate of Death listed the cause of death as Disease of the Brain following illness of three years.

William Owen Baldwin

William Owen Baldwin was born on August 9, 1818, about four miles north of the site where Montgomery is located. Indians had flourished in this district until their defeat in 1814 by the forces of General Andrew Jackson four years before William was born. The next year, white settlers moved into the surrounding country which was part of the Mississippi Territory. Baldwin's parents moved and settled there in 1816. Congress divided the Mississippi Territory on March 1, 1817, and two days later organized the Alabama Territory. In August, 1817, Congress began the sale of land in the territory which took the name, Alabama from the name of the two Alibamu Indian towns which had been in the area that William's family settled in. Three Villages of white settlers soon replaced the Indian towns: Town of Alabama, New Philadelphia, and East Alabama. The Baldwins lived near the first of these villages. The latter two of these villages were incorporated as the City of Montgomery on December 3,

1819, eleven days before Alabama was admitted to the Union.

Baldwin's great grandfather, David Baldwin, a native of Virginia, moved to Georgia and it was his grandson who was born in Georgia and was the father of William Owen. When William Owen was nine years old his father died leaving a widow with seven children of whom he was the second son and the fourth child. He received his education at an academy near his home but did not go to college. At sixteen he began to read medicine with Dr. McLeod, the leading physician in Montgomery, before entering the Medical College of Transylvania University in the fall of 1835.

Dr. William Owen Baldwin opened his office for the practice of medicine on May 1, 1837, and three years later entered into partnership with his former preceptor, Dr. McLeod who died the next year.

He took an active interest in the Medical Association of the State of Alabama. He delivered the annual address at the second annual meeting on December 10, 1849. He was elected Vice-President of the Association in 1851. He was a member of the committee to prepare a memorial to the State Legislature urging the construction of a hospital for the insane in Alabama.

The American Medical Association also came in for some of his interest and activities. At the close of the War Between the States there was a general feeling that southern physicians should identify themselves again with the American Medical Association which was founded about six months before the Alabama Medical Association. And in 1868, a large group of southern physicians did attend the annual meeting of that organization in Washington, D. C. No doubt the training, experience, and general personality of Dr. Baldwin were involved in his election as President of the American Medical Association on May 7, 1868, the first southerner so honored after the war. Because of the import of the reunion of the two groups of practitioners he chose to present an acceptance speech. The speech was a masterpiece in its content as it

concerned the unification of spirit of the northern and southern practitioners of medicine. At the next annual meeting in May, 1869, at New Orleans, Dr. Baldwin's presidential address stressed medical education as well as the moral spirit of the Association. One writer had this to say concerning the address: "His address as President on that occasion is replete with Christian and patriotic sentiments, so beautifully expressed and well-timed as to remain shining landmarks in the history of the Association."

Dr. Baldwin was not a prolific writer but his papers direct attention to the thorough training and keen observation that he had, as well as his ability to express himself clearly.

He became a prosperous physician and before 1870 had owned \$8,000.00 worth of real estate, sixteen slaves and \$100,000.00 worth of personal property. It was in 1870 that he organized the First National Bank of Montgomery and was elected its president. In addition to his extensive practice he also was successful as a financier, and accumulated a considerable fortune.

On December 7, 1843, Mary Jane Martin became the wife of Dr. Baldwin and seven children were born to this union.

In 1884, Dr. Baldwin had a heart attack but continued to practice until a short time before his death on May 30, 1886.

Peter Bryce

Peter Bryce was born on March 5, 1834 in Columbia, South Carolina. His father came from Scotland when he was a young boy and became so successful in business that he enjoyed ample means to give his children the advantages of a liberal education. Young Peter enrolled in the Citadel on January 1, 1852, and four years later, November 1855, was graduated with honors.

Following graduation he became an officer in a home town bank. The institution made him a lucrative offer to remain with the bank,

but he declined as he had already decided upon medicine as his life's work. No doubt the officers of the bank had been influenced somewhat by young Bryce's ability as a writer and orator. He had been selected to deliver a speech at the commencement exercises. The local paper heaped praise on Peter for both the construction and thought involved in the speech and for his talent as an orator.

In 1857, Peter quit the bank and entered the study of medicine in the Medical Department, University of New York, from which he graduated with the M. D. degree in March 1859. Soon after graduation he went to Europe to visit and study in the principal medical centers. On his return from Europe he became assistant physician at the Insane Hospital, New Jersey. However, he soon left that institution to accept a similar position at the State Hospital, Columbia, S. C. The next annual report of the hospital dated, November 5, 1860, contained this statement: "In May we lost the valuable services of Dr. Peter Bryce. Justice to himself and with a view to extend his sphere of usefulness, he resigned his place at this institution as assistant physician, and is now the Superintendent and Physician of the Alabama Hospital for the Insane."

The movement to establish a hospital for the insane in Alabama had been under way for several years. Miss Dorothea Lynde Dix, a New York philanthropist, visited Alabama and presented a memorandum to the General Assembly on December 14, 1849. Largely through the efforts of Miss Dix the General Assembly made provision to establish a hospital for the insane of Alabama. The building was slow in construction; but when success was assured, Miss Dix urged Dr. Peter Bryce to apply for the position of physician at the new insane hospital at Tuscaloosa. Consequently, on December 30, 1859, Dr. Bryce wrote a letter to Dr. A. G. Mabry, Selma, in which he made formal application for the office of physician to the Alabama Insane Hospital. And the Board of Trustees appointed Dr. Bryce to the position of Medical Superintendent of the institution. Two renowned Tuscaloosa physicians were members

of the Board: Dr. Reuben Searcy and Dr. James Guild, father of Dr. La Fayette Guild. Thus, at the age of 26, Dr. Peter Bryce became the first superintendent of the Alabama Insane Hospital on July 1, 1860. Dr. Peter Bryce arrived long before the buildings were completed and the first patient was admitted about ten months later on April 5, 1861, seven days before Brig. General P. G. T. Beauregard shelled Fort Sumter, Charleston, South Carolina.

Dr. Bryce became known for his theories and practice concerning the abolition of mechanical and other restraints in the treatment of the insane patient. He stopped the use of the strait-jacket system of restraint. He noted that the new treatment did not require the administration of more of the quieting drugs. He also saw that every patient had some employment which helped to keep him occupied. Dr. Bryce was convinced that it was the greatest advance in the treatment of the insane during the preceding 50 years.

The press in the large cities was complimentary to Dr. Bryce for his treatment of the insane. He read papers before various national societies concerning the treatment that he inaugurated at his hospital and in each case he was commended for his contribution to society.

Dr. Bryce took an active interest in medical societies and held offices in many of them. In fact, he became President of the Medical Association of the State of Alabama in 1877, Vice-President of the Medico-Legal Society of New York, President of the Alabama Historical Society for many years, and President of the American Medical Psychological Association. He was highly respected as an alienist and was invited as an expert to testify in the trial of Charles L. Guiteau who shot President James A. Garfield. The Board of Trustees of the University of Alabama conferred the honorary degree of Doctor of Laws upon Dr. Bryce in 1882.

Dr. Bryce married Miss Ellen Clarkson, of Columbia, South Carolina, on November 28, 1860. Although Mrs. Bryce was not in the employ of the hospital, she became involved

in many of the activities such as furnishing the music for the regular morning services, directing the singing by the inmates, and conducted a Sunday school for the children of the employees of the hospital. Dr. Bryce was a fruitful writer, a graceful speaker and an accomplished gentleman. He died of Bright's disease on August 14, 1892.

The name of the Alabama Insane Hospital was changed by the next Legislature to the Alabama Bryce Insane Hospital. The name of the institution has now been changed to The Bryce Hospital.

La Fayette Guild

La Fayette Guild was born on November 23, 1825 at Tuscaloosa, Alabama. Dr. James Guild, his father, had moved to Tuscaloosa in 1821, soon after he had graduated with the M. D. degree from Transylvania University, Lexington, Kentucky. Dr. James Guild practiced his profession in Tuscaloosa until his death in 1884. Dr. James Guild owned a large tract of land on the outskirts of Tuscaloosa which later was named Guild Woods.

La Fayette pursued his studies at the University of Alabama where he took an active part in the Erosophic Literary Society. In 1845 he received the A. B. degree and in 1848 the M. A. degree from the University of Alabama.

He read medicine with his father and entered Jefferson Medical College, graduating with the M. D. degree in 1848. The next year was spent as a private pupil of Dr. Phil Aylette of New York City. His love of adventure led him to enlist in the U. S. Army on March 2, 1849 with the rank of assistant surgeon. His first assignment was to Key West, Florida, and he served at several posts during the next few years. Just previous to the War Between the States, Dr. Guild was stationed in the new State of Oregon where he was attached to the famous Second Cavalry Regiment, U. S. Army, of which Albert S. Johnston was

Colonel, Robert E. Lee was Lt. Colonel and to which Fitzburgh Lee was attached.

Since the Civil War was on and since both he and his wife were native Alabamians, Doctor Guild resigned his commission with the U. S. Army on July 1, 1861, and returned to Tuscaloosa to visit his family. While there he decided to enlist in the cause of the Confederacy and immediately went to Richmond where he was appointed as surgeon, Medical Department, C. S. A. An order dated August 7, 1861, shows that Surgeon Guild was Inspector of Hospitals. This assignment brought him into close contact with General Joseph E. Johnston, whom he thought was among the greatest strategists of either army.

It was at the Battle of Seven Pines that General Joseph E. Johnston was wounded, May 31, 1862, and two days later, Robert E. Lee succeeded him as General of the Army of Northern Virginia. One of the first inquiries of General Lee was: "Where is Doctor Guild? Tell him to report to me in person." It was on the battlefield of Seven Pines, June 27, 1862, that Doctor La Fayette Guild was given his commission as Surgeon and Medical Director of the Army of Northern Virginia, which post he held with honor to his profession and his country until the surrender at Appomattox Court House, Virginia, April 9, 1865.

This position placed Doctor Guild on General Lee's staff and from that time until the end of the conflict, he sustained the closest personal relationship with the great southern General.

It is fortunate that much correspondence of the confederate officers was preserved and we have located many letters by Dr. Guild. Abstracts of two interesting letters follow. The true regard and respect for Dr. Guild's integrity was pointed up by a letter from Richard H. Coolidge, Medical Inspector, U. S. Army to the Surgeon General of the U. S. Army.

Washington, D. C.

September 11, 1862

The Surgeon General of the Army

General:

. . . the reply received by Medical Director Guild directed Medical Director Guild to furnish subsistence for our wounded as far as possible. Although doubtful of the propriety of doing so, I accepted the invitation to pass the night with Medical Director Guild at his camp on the battlefield.

Richard H. Coolidge

Medical Inspector, U. S. Army

Due to the lack of certain food in the diet, the Confederate soldiers often showed signs of scurvy. The following letter by Doctor Guild is of interest.

Medical Director's Office

Army of Northern Virginia

January 9, 1863

Dr. S. P. Moore

Surgeon General, C. S. Army

Sir: . . . There is a tendency to scorbutus throughout the whole army. Unless there is an increase in the vegetable portion of the ration, scurvy must make its appearance. . . Our next campaign may be a disastrous one, simply for the want of antiscorbutics.

I am, Sir, very respectfully, your obedient servant.

L. Guild

Surgeon and Medical Director

of the Army of Northern Virginia

After the cessation of hostilities, Doctor Guild settled in Mobile to practice medicine in his wife's home town. He was pressed into service as Quarantine Inspector for the Port of Mobile in 1866 and continued in this post until 1869 when he resigned because of poor health and moved to California. Soon after his arrival in San Francisco, he was elected visiting surgeon of the City and Country Hospital. He continued to practice until the early part of the summer of 1870 when he went to visit in the home of a friend in Marysville, California. He died there on July 4, 1870.

George Augustus Ketchum

George Augustus Ketchum was born on April 6, 1825 in Augusta, Georgia, the son of a cotton merchant. The family moved to Mobile in 1835 and young George received his early education from private tutors. He was planning to enter Princeton College when his father's failure in business obliged him to accept the position of assistant teacher in the female seminary, Livingston, Alabama, at 16 years of age. George read medicine under Dr. F. A. Ross of Mobile and entered the City Hospital as resident medical student. His first course of medical lectures was taken at the Medical College of South Carolina, Charleston, 1844-45; and in the spring of 1845 he became an interne at Old Blockley, Alms House of Philadelphia.

He attended a second course of medical lectures at the University of Pennsylvania, receiving the M. D. degree in 1846, and commenced the practice of his profession in Mobile in May of the same year. In 1848 he was elected Physician to the City Hospital of Mobile and in the same year, in conjunction with Dr. J. C. Nott, established a private infirmary, principally for negroes, which had many years of successful operation until it was closed soon after the War Between the States.

Dr. Ketchum took an active part in the Medical Association of the State of Alabama and served as its secretary from 1852-54. He

was president of the Mobile Medical Society in 1866. He took an active interest in organizing the Medical Association of Alabama on December 1, 1847, and in reorganizing it after the War in 1868. He was the Annual Orator in 1870 and was elected president in 1873. He was elected Counsellor in 1873 and later on was elevated to Grand Senior Life Counsellor.

Dr. Ketchum along with Dr. J. C. Nott, Dr. W. H. Anderson and his preceptor, Dr. F. A. Ross, appealed to the public for funds to establish a Medical College in Mobile. Within a few weeks about \$75,000 was subscribed and Dr. J. C. Nott was commissioned to go to Europe to buy equipment, supplies, and articles for the museum. The school opened in the fall of 1859 with Dr. Ketchum as Professor of the Theory and Practice of Medicine, a position he held until his death. On the resignation of Dean William H. Anderson in 1885, he became the second Dean of the Medical College of Alabama and served for the next twenty-two years.

He was elected President of the Board of Health in Mobile in 1871 and through his efforts, Dr. Jerome Cochran was appointed Health Officer. Dr. Ketchum was always concerned with the sanitary needs of the people of the state and the related obligations of the medical profession. He was concerned about obtaining an adequate supply of good water for Mobile, but his efforts to establish a waterworks were lost due to the lack of cooperation of the Republican Government.

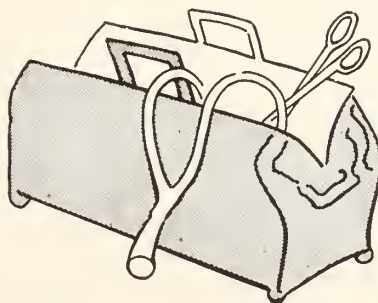
His oratorical powers were of the highest order and his lectures to his medical students were masterpieces. They stressed not only

the need and importance of a store of medical knowledge and skill but also the cultivation of that spirit and feeling which alone harmonizes with the objects, interests, and true aims of the science of medicine. He suggested that the true professional spirit look beyond selfish aims and personal profit to the respectability, honor, dignity, and humanity of a calling.

His biographer in 1880 stated that as a general practitioner he had no superior and in consultation had the largest practice in Mobile. In spite of his immense practice he found time to serve as Professor of Medicine, Dean of the Medical College, to attend meetings of various societies and serve as President of most of them. His courteous and attractive manners and high character won him the highest regard of all who had the privilege of knowing him and made him a great favorite in social circles.

He married Susan Burton, daughter of Dr. John Burton, Philadelphia, on November 23, 1848, and they had two daughters.

Dr. Ketchum died on May 29, 1906, due to chronic nephritis. By a singular coincidence the year that saw the closing of his long and illustrious career saw and witnessed the absorption of the Medical College as the Medical Department of the University of Alabama. A statement by the President of the Medical Association of the State of Alabama appeared in the 1907 Transactions of the Association. "The finis which we write for the great medical institution which he loved, and for which he labored so faithfully, must be our vale to one of Alabama's greatest and most honored citizens."





PATENT RIGHTS

The future of medical research and medical practice is being threatened by legislative proposals now before Congress.

One aspect of the recently submitted Ke-fauver-Celler Bill would amend our basic patent laws by reducing the period of patent protection for a newly invented drug from 17 years to three. This provision would make it compulsory for the inventor to license the drug to any other qualified company which wanted to make it after the three year period. This would hamper progress in medical research; for what company would want to assume the burden of all the research that does not succeed but that must be performed to find the one in 2,865 compounds that pays off? Without the present patent protection it would be economically impossible for our leading pharmaceutical houses to continue risking vast sums in unpredictable research.

The other provision would forbid the prepatent licensing, manufacturing, and marketing of new drugs. Under our present practice, fully approved by the U. S. Patent Office, two or more firms applying for patents on similar or identical products may work out an agreement to manufacture and distribute the product while the Patent Office determines who is to receive the patent.

The alternative to this agreement practice would be a formal legal interference proceeding which is usually long, drawn out, and tremendously expensive.

Under this system contestants would not be able to market the drug until the legal proceedings were settled, thus withholding important new drugs from the public for years.

The small pharmaceutical houses would not be able to afford the expensive legal pro-

Editorials

ceedings, and the elimination of agreements would restrict the patent rights to one company rather than two or more.

With so much of American business stability, profit, and progress depending upon patent protection, the removal of this protection, either piecemeal or in toto, would produce utter chaos in most of our business—chaos which would spread throughout the entire American economy, eventually endangering the basic industrial fabric of the nation.

FREE MEDICAL CARE

A 1959 survey by the Philadelphia County Medical Society revealed that the average Philadelphia doctor treated a patient free of charge about 500 times a year, according to *PR Doctor*, a publication of the AMA Communication Division.

If dollar values were assigned to such care, including surgery, the yearly contribution for the individual physician would total more than \$6,000—a figure which speaks for itself in demonstrating the doctor's dedication to the health welfare of his community.

The Philadelphia County Society's free care survey was a pilot study, conducted at the request of its committee on medical economics "to make evident to the public the good-will of physicians in furnishing such care."

The survey included such questions as: How many "free" patients did you treat in your office, clinics, hospitals, and other visits in 1959? What do you estimate the total fees you would have charged if these patients had not been indigent?

GENERIC VS. TRADE NAMES

Much has been printed in medical journals recently about the merits of the use of generic names vs. trade or brand names in writing prescriptions for drugs.

Writing in the April issue of the Journal of the Medical Society of New Jersey, Dr. Albert G. Hulett illustrated the problem of nomenclature of modern drugs by relating how he provided a patient and his wife, who were embarking upon an ocean cruise, with some Dramamine tablets to combat seasickness. Dr. Hulett consulted the "authorities" only to discover that there is no generic name for Dramamine. So, . . . he bravely wrote a prescription for thirty tablets of "Beta-dimethylaminoethyl benzohydrido-ether-beta-chlorotheophyllinate-dimenhydrate," the precise chemical name. An hour later the pharmacist phoned: "What in blazes is the drug you ordered for Mr. Short?"

SPACE AGE

Sooner or later it had to happen . . . the entrance of space age terminology into the field of medical news reporting. We recently received a news release which stated that "one of the most dramatic features of the recent June American Medical Association Meeting in New York was that it served as a launching pad for the orbiting of a huge new drug manufacturing enterprise."

We are sure that the writer of the release didn't mean to imply that the new pharmaceutical company, Philips Roxane, Inc., would be going around in circles after its introduction to the medical profession.

The new corporation is a merger of three European and three American companies that have had their "feet on the ground" for some time. They are Philips Electronics; Pharmaceutical Industries Corporation; N. V. Philips-Duphar of the Netherlands; and the Columbus Pharmacal Company of Columbus, Ohio; Anchol Serum Company of St. Joseph, Missouri; Thompson-Hayward Chemical Company of Kansas City.

Philips Roxane has erected a new plant at its headquarters location in St. Joseph and

has developed a promising new measles vaccine and a progestational agent.

Happy orbiting Philips Roxane!

DR. PAUL DUDLEY WHITE

The same day that Dr. Paul Dudley White was in Montgomery expounding the automobile as responsible for the incidence of atherosclerosis in this country, the U. S. Army announced that a hydrogen peroxide-powered flight belt had been developed to allow man to fly over rivers and up hills that would leave him breathless to climb.

The famous Boston cardiologist told lay workers and physicians attending the one-day meeting of the Alabama Heart Association that the car probably does more harm to people off the road than on, despite the high incidence of accidents, by taking people off their feet. Push button devices are also responsible, he added.

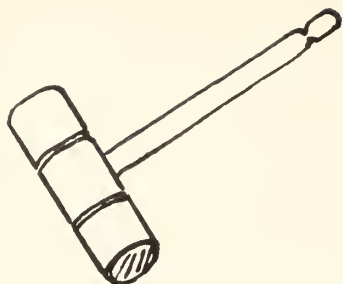
HEROIC NURSE

The Journal wishes to congratulate Nurse Shirley Wharton of the Druid City Hospital in Tuscaloosa on receiving a bronze medal and \$500 from the Carnegie Hero Fund Commission.

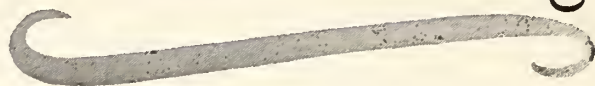
The award cited Mrs. Wharton for saving the life of a patient, who was in a confused state due to sedation following surgery, by climbing out of a window on the fourth floor and dropping to a concrete ledge four feet wide which was 55 feet above ground level. Mrs. Wharton inched her way about 45 feet along the ledge to the patient and started talking to him to keep him calm. Mrs. Wharton said at first he tried to pull away; but she led him along the ledge to a vacant room where an orderly, Lucious Love, helped them back into the building through the window.

CORRECTION

On page 594 in the June issue of the Journal we mistakenly listed Dr. E. L. Strandell of Brewton as a member of the Board of Censors. Dr. Strandell was re-elected vice-president of the southwestern division at the annual meeting in Tuscaloosa.



President's Page



One of the prime interests in the career of a physician is his relation to the hospitals of his community. This involves a good understanding of not only the requirements of staff membership but also the duties of the medical staff toward the patients in the hospital. The best possible care of patients is fundamental to the success of this community effort. To give this sort of care, physicians need to be familiar with many administrative procedures, although final determination of necessary methods may not be solely subject to the decision of the medical staff.

In Alabama we have all long felt that Blue Shield-Blue Cross operation has been an intimate concern of the doctors. In the by-laws of Blue Cross-Blue Shield there is a definite statement that all matters pertaining to medical practices are under the sole voting and executive power of the six members of the Executive Board who are chosen by the State Medical Association. In matters involving actuarial determination, these six members have the same voting rights as the lay members of the executive body. It has been found that many problems arise in the area of medical practice: for example, the reasons for hospital admission, presentation of bills, the length of stay, use of laboratory facilities in the proper way. All these involve medical practices. Since this is a fact, discussion and review of practices fall within the purview of the medical members of the Board.

The authorities of your Association and the administrative authorities of Blue Cross and

Blue Shield feel that there is continual need to strengthen this function of those doctors selected by the State Association. Many of the vexing questions which arise in connection with hospital operation can be solved if the individual physicians of the state are aware of this provision in the by-laws and will feel that they have the right and the duty to refer any such questions which arise to these members of the Board. Further, the State Board of Censors wants these members to know that the full authority of the Association is behind them when decisions are made on the basis of facts and sound judgment. The status of hospitals remains precarious in many areas; and certainly it is the duty of all of us to make every effort to see that medical practice in them remains true to high standards, that its dignity is respected, and that the relatively few physicians who do not conform to these standards are led into the proper type of relationships with their patients and with the hospital services in their communities.

John W. Simpson, M. D.



ASSOCIATION FORUM

EXPERTS PROBE LAG IN CARE OF MENTALLY ILL

A massive, five-year study by select commission blames professionals and the public and urges billion-dollar budgets for sweeping reforms

It is not the symptoms of mental illness that send a patient to a mental hospital—but that people can no longer stand his behavior.

And once in the hospital—especially if it is state run—the patient's care may be largely punitive and custodial, not therapeutic.

With these blunt comments, a blue-ribbon commission of 44 psychiatrists and physicians points up the dreary picture they unearthed in a \$1,500,000 five-year study of "the lag in mental health care."

Mental illness, the commission finds, is commonly regarded as America's number one health problem. But it is way down on the list in terms of money, manpower and public concern. It takes second place in spending at the National Institutes of Health—which ap-

pointed the commission. It is eighth in line among the voluntary fund campaigns. Press surveys show that despite repeated "snakepit" exposés, mental illness has relatively low reader impact. State institutions spend an average of \$4.44 per patient per day compared to \$31.16 for general care in community hospitals.

Members of the Joint Commission on Mental Health, calling their 100,000-word report to Congress "realistic" and sometimes "pessimistic," spread the blame evenly among the public, the Government, the medical profession and psychiatric workers. Their recommendations range from new programs of public education to a request for Federal intervention. But their main target is the state hospitals—that "have no defenders but endure despite all attacks." Here, the commis-

sion says flatly, "is the core problem and unfinished business of mental health.

"One of the most revealing findings of our mental health study is that comparatively few of our 277 state hospitals—probably no more than 20 per cent of them—have participated in innovations designed to make them therapeutic, as contrasted to custodial, institutions.

"Eight of every ten mental hospital patients are in state institutions. These hospitals carry a daily load of more than 540,000 patients and look after a million in a year's time.

Patterns of Rejection

"Our information leads us to believe that more than half of these patients receive no active treatment of any kind designed to improve their mental condition."

All this, the commission finds, reflects a pattern of social rejection that has not been greatly helped by public education campaigns. Nobody, not even the doctor, loves the severely mentally ill. The family wants to be relieved of his prickly presence. The general practitioner neither understands him nor is sympathetic to him. The psychiatrist prefers to handle the neurotic, easily treated patient. And finally, according to the study group, the superintendent of the state hospital and his staff may share the public's stigmatizing attitude toward the mental patient.

These attitudes are somewhat understandable, the commission admits. Unlike other sick people, the mentally ill do not reach out pathetically for help; nor, when they receive it, do they always reward the helper with gratitude. Other sick people evoke sympathy; the mentally ill repel it.

Thus, the commission underscores, education is on the wrong track.

Public education has failed because it has not helped the public to recognize that the mentally ill are not appealing. If it is to succeed, it must do this so that people can deal "openly and consciously" with the problem

of rejection, and rise above merely self-preservative functions.

In an intensive study of the manpower problem, the commission also finds a great shortage of mental health workers, which is related to the shortage of professional manpower in general—teachers, physicians, scientists.

"With frank pessimism," the commission concludes that sufficient personnel to eliminate "glaring deficiencies" will never be available unless there is a great change in social attitudes and a "massive national effort" in all areas of education—or unless there is a sharp breakthrough in mental health research.

As for research, the commission says:

"The enormous task of taking care of mental patients is matched by the enormous research lag in the study of human behavior. The Federal Government's policies determine the shape, size, direction and soundness of the over-all effort" in mental health research, and the Government currently favors short-term applied research, rather than the long-term basic approach that is essential.

What can be done to reduce this staggering list of debits? The commission offers some answers. It realistically gives No. 1 priority to money.

Federal, state and local expenditures for public mental patient services should be doubled in the next five years—and tripled in the next ten, it says. A progressive matching of Federal and state funds should be set up on a ratio of one to ten the first year, one to two after five years and one to one after ten years.

To give an idea of the kind of money the commission has in mind, the National Institutes of Health has a \$100 million budget this year for mental health. Within ten years, the commission estimates, local, state and Federal governments should spend three billion annually.

Since legislators probably feel they've already moved as fast as public demand will permit, the commission recommends that something be done to press lawmakers into

action. Congress, it says, should *immediately* appoint a committee of consultants who will work out ways to implement the recommended program and suggest enabling legislation.

In its recommendations, the commission again hits hard at the problem of local and state hospital care.

"The mental hospital needs to be integrated into the community. This means keeping in closer touch with all the community's public and private service agencies—so that the backward, custodial system can't thrive and the hospital's shortcomings may come to attention.

"The state hospitals must cease to be treated as a target for political exploitation. Patronage must end.

"These hospitals and their community extensions—clinics and after-care programs—must be manned by properly motivated career workers and not by hacks, professional or lay. These workers need to be well trained and well paid."

Smaller Hospitals Converted

In fact, the commission says, no new state hospitals of 1,000 beds or more should be built at all, and the present smaller hospitals should be rapidly converted into intensive treatment centers for major mental illness cases. All new state hospital buildings should be of this latter type. And community general hospitals must accept mental patients for short-term hospitalization, thereby providing a psychiatric unit or psychiatric beds.

HOW STATES COMPARE IN CARE OF THE MENTALLY ILL
(As of 1958)

STATE	Patients per 100,000 pop.	Professional personnel per 100 patients	Psychiatrists per 100,000 population	Daily expenditure per patient	STATE	Patients per 100,000 pop.	Professional personnel per 100 patients	Psychiatrists per 100,000 population	Daily expenditure per patient
Alabama	230.4	1.2	1.4	\$2.46	Nebraska	312.8	6.6	3.8	\$4.59
Arizona	143.4	3.0	3.2	4.24	Nevada	190.7	2.9	1.8	4.27
Arkansas	281.6	2.6	3.2	3.37	New Hampshire	449.4	2.3	4.1	4.53
California	260.6	4.0	9.0	5.08	New Jersey	383.8	4.4	5.3	4.94
Colorado	347.3	3.6	6.4	4.72	New Mexico	116.3	3.5	1.8	4.91
Connecticut	376.9	6.4	12.2	5.80	New York	589.2	3.8	15.6	4.28
Delaware	395.1	4.0	5.5	4.72	North Carolina	215.7	2.9	3.3	3.97
Dist. of Col.	866.3	5.6	27.8	6.17	North Dakota	275.3	3.1	1.4	3.49
Florida	200.1	2.2	3.6	3.29	Ohio	299.4	3.7	4.5	4.21
Georgia	313.4	1.4	1.9	2.62	Oklahoma	334.4	1.9	2.8	2.99
Idaho	164.0	4.5	2.3	4.47	Oregon	286.5	2.7	3.2	3.87
Illinois	375.0	2.9	5.4	3.66	Pennsylvania	352.1	4.2	6.5	3.73
Indiana	241.8	4.0	2.9	4.45	Rhode Island	405.4	3.6	6.6	4.30
Iowa	176.1	5.0	2.7	4.28	S. Carolina	270.7	1.5	1.5	2.41
Kansas	202.7	8.0	10.3	6.15	S. Dakota	241.0	3.0	2.0	3.66
Kentucky	238.9	3.3	2.7	2.99	Tennessee	236.0	2.2	2.8	2.45
Louisiana	269.0	1.8	4.0	2.76	Texas	173.7	2.2	2.8	3.07
Maine	317.1	2.8	3.4	3.77	Utah	153.9	2.4	4.7	3.45
Maryland	320.6	3.4	12.3	4.47	Vermont	329.2	2.9	5.1	4.65
Massachusetts	453.4	5.2	11.9	4.80	Virginia	291.6	2.2	3.9	3.08
Michigan	280.8	3.1	4.9	5.11	Washington	253.0	1.9	4.5	4.28
Minnesota	330.8	2.9	3.8	3.89	W. Virginia	274.5	2.1	1.7	2.33
Mississippi	239.5	1.8	1.8	2.11	Wisconsin	380.3	2.3	3.5	4.06
Missouri	274.6	2.5	4.2	3.52	Wyoming	197.2	2.1	2.5	3.71
Montana	256.0	2.0	2.0	3.66	U.S. Average	319.3	3.4	6.1	\$4.06

Data for Alaska and Hawaii not available.

Source: American Psychiatric Assn., National Assn. for Mental Health.

Among other recommendations:

- The Federal Government should enact tax laws permitting deductions for higher education costs.
- A community mental health clinic should eventually be provided for each 50,000 population.
- A national manpower recruitment and training program should be initiated to stimulate the interest of American youth in mental health work as a career. A President's prize—or two, at \$50,000 each—should be created for outstanding scientific or educational contributions to mental health.
- Support should be provided for resident training programs in pediatrics that incorporate psychiatric information.

What is the next step?

"The matter is now out of our hands," says Dr. Ralph Kaufman, head of psychiatry at

New York's Mt. Sinai Hospital and a member of the commission. "But we hope to start a brushfire, not just get mere crumbs from our recommendations."

Sen. Lister Hill (D-Ala.) and Rep. John Fogarty (D-R.I.), who initiated the Mental Health Study Act of 1955, are expected to recommend prompt action, but it is by no means certain that any will be taken this year. Yet vastly increased sums of money are essential to the commission's program. Says Dr. Jack Ewalt, executive director of the commission: "Without adequate financial resources, we cannot take care of patients, we cannot educate professional personnel for public service, and we cannot pursue the basic knowledge needed for the prevention and cure of mental illness."

Reprinted from Medical World News.

Production, Not Handouts

THURMAN SENSING

Those areas in the country now facing unemployment problems have the sympathetic concern of Americans everywhere. Economic suffering in this rich land is dismaying; it should not exist. Indeed cutbacks in production would not be recorded today if the country had been following sound, conservative advice in recent years.

In this connection, it is well to note that the President's plans for aiding the unemployed in hardship areas are mere palliatives. He has

proposed that more and better food be given to the unemployed out of the stocks of surplus goods. While it is far more sensible to do this than to ship such foodstuffs to Iron Curtain countries like Poland, food packages won't create jobs. And it is jobs, not a dole, that out-of-work Americans need and want. The Food Stamp plan contains the same basic fault. So would any large-scale program of public works.

No thoughtful citizen wants to go back to the days of the WPA and to bread lines. They want private enterprise to flourish and employment opportunities to be sufficient for all.

Mr. Sensing is executive vice president of the Southern States Industrial Council.

There's only one way for industry to provide an adequate number of jobs. That is to let it produce goods that can sell at home and abroad without unfair competition.

Textile mills in the South would not be working short weeks were it not for the flood of Asian textiles now in this country. If Japanese textile imports were curtailed, for example, textile-manufacturing communities would be enjoying prosperity.

The same thing applies to the steel industry. One major reason for the decline in steel production, with resulting drops in employment, is the enormous sale in this country of metal goods produced abroad.

Senator Hartke (D-Ind) recently cited comments of unemployed persons to whom he had talked while on a trip with the Secretary of Labor. "Again and again," he said, "those who are unemployed complain about the money our government sends to starving people overseas. They say, 'Why doesn't our country keep that money here? We need it.' So, you can understand the opposition to some of our foreign aid programs." The Senator also cited comments by industrial workers about "toys, bicycles and automobiles" shipped into this country from other lands.

These imports are taking away jobs from workers and profits from shareholders. Rising imports contributed to the decline of corporate profits last year. Either the imports are controlled or American business, working people included, face years of suffering.

Handouts won't cure the problem. And the New York Times is way off base when it suggests editorially that the problem can be solved by providing "government assistance to those industries, communities or areas that really are hit by specific foreign imports." Who, after all, is to provide the handout? Which section of the country is to be the philanthropist?

An argument advanced by foes of import controls is that Japan and Germany, to cite two nations, will turn neutralist or toward the communist bloc if they are denied full trade privileges in the United States. This is un-

imaginative. Of course, both countries must trade. But why doesn't the United States help steer German economic activity toward Africa and Japan's trade toward Southeast Asia and the Middle East countries where it buys the bulk of its oil? Germany, for instance, could be encouraged to form long-range development plans for Portugal's huge African territories. German technical know-how could tap these markets for the benefit of both countries. But the United States is apparently scared of being charged with promoting neo-colonialism. But it is that or ruinous competition for American industry at home. And what's wrong with helping a Western nation move into an area the communists want to dominate?

All that's needed to achieve new levels of prosperity, while keeping U. S. allies happy, is for departments of government to stress capitalist objectives and capitalist means. Without such stress, the United States cannot long endure. Socialist so-called "solutions"—the handout philosophy—will only cripple this Republic.

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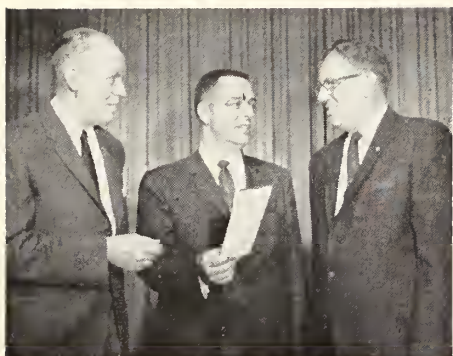
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Dr. L. R. Burroughs, Jr. (center), MASA's representative to the Inter-professional Relations Subcommittee of the Alabama Pharmaceutical Association and the Medical Association of the State of Alabama discuss mutual problems with M. G. Mullen-dore (left), president, and Roy Payne of the Alabama Pharmaceu-tical Association at a meeting of the subcommittee in Birmingham.



Senior Class President—Beau Dunn (center) of Wetumpka is shown above with Herb Singleton (left) of Blue Cross-Blue Shield and Dr. Henry Hodo during Blue Cross-Blue Shield's annual senior class dinner dance. Dr. Dunn is shown at left with Dr. and Mrs. John Simpson of Birmingham.





Shown at the premiere of "Shop Talk" are (left to right) Dr. W. A. Edwards, Dr. Lewis C. Robins of the U. S. Department of Health, and Dr. John Paul Lindsey, Nashville, former chairman of AAGP Commission on Education.



"What We Know About Heart Disease" was the topic of a panel discussion during the Alabama Heart Association's meeting in Montgomery. Moderator Dr. Julius Michaelson (left) is shown with panelists Dr. J. Willis Hurst, Emory University; Dr. W. B. Frommeyer, Medical College of Alabama; and Dr. Edgar Hull, L.S.U. Medical College.



Following the panel discussion, Dr. Harry M. Simpson, Jr., Florence (center), was installed as the 1961-62 president of the Heart Association. He is shown above with retiring president, Dr. J. Randolph Penton, Jr. (left), Montgomery and Dr. D. E. Owensby, East Tallassee, president-elect.

At the annual banquet, Dr. Patton (below) is shown introducing Boston's famous cardiologist, Dr. Paul Dudley White (center), who was guest banquet speaker. Dr. John Burrett is shown at left.





Outgoing President — Winston A. Edwards receives the Alabama Academy of General Practice's Past-President Plaque from Dr. James R. Garber at the First Dixie Postgraduate Assembly banquet.



Dr. Garber administers the President's oath to Dr. L. R. Burroughs, Jr., during the banquet. Dr. Philip Thorek, one of the assembly speakers, is shown at left.



Dr. Alton Ochsner of New Orleans introduced Dr. Thorek who spoke on "Food For Thought" at the banquet.



A "Tipsy Tea" at The Club was one of the social functions planned for the attending physicians' wives.

The Birmingham Country Club was the scene of a Latin Fiesta Dinner Dance Thursday evening during the First Dixie Postgraduate Assembly.





MEDICAL CENTER NEWS



Dr. White

Dr. White Named Anesthesiology Chairman

Dr. Chester W. White, Jr., was recently appointed chairman of the Department of Anesthesiology at the University of Alabama Medical Center.

Dr. White has served as Anesthesiologist-in-Chief at Boston Lying-in Hospital since 1957. A native of Maine, he attended Boston University and McGill University and graduated magna cum laude from Boston University School of Medicine. He received his M. A. degree in pharmacology from Boston University Graduate School as a Public Health Service fellow in 1949.

The new chairman served as resident director of anesthesia research and associate visiting anesthesiologist at Boston City Hospital and was research associate in pharmacology for three years at Boston University School of Medicine.

McManus Resigns, Lupton Appointed New Chairman of Pathology

Dr. Charles H. Lupton, Jr., has been appointed to replace Dr. J. F. A. McManus as chairman of the Department of Pathology at the Medical Center.

Dr. McManus has accepted a position as professor of pathology at the University of Indiana.

Dr. Lupton received his medical degree from the University of Virginia and has been affiliated with the Medical Center since 1955 as associate professor and acting chairman of the Department of Pathology.

Dorsey Grants Awarded

The first grants from the newly created Claude E. Dorsey, Jr., Memorial Fund have been awarded to Charles W. Pruett of Ashland, who will be a senior next fall, and Robert Curry Robbins of Florence, who is entering his sophomore year in medical school. Both grants are for \$1,000.

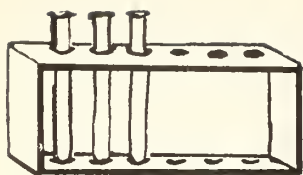
Dr. McKibbin Joins Medical Center

Dr. John M. McKibbin, former professor of biochemistry at the New York State University, has been named professor and chairman of the Department of Biochemistry of the University of Alabama Medical Center.

Merck, Hubbard Top Interns

Dr. Daniel E. Merck and Dr. William H. Hubbard have been named recipients of the Senior Class' first annual Internship Awards.

Dr. Merck was voted the "Best Teaching Intern" and Dr. Hubbard was selected as the "Best All-Around Intern" by members of the Senior Class.



STATE DEPARTMENT OF HEALTH

INTER-AGENCY COOPERATION IN MEDICARE FOR ALABAMA'S AGED

At present Alabama provides two phases of medical care for its old age pensioners in line with provisions of the 1960 Federal Social Security Amendments—care in a licensed nursing home and limited hospital care for acute illness or major injury. The first of these services, already in operation last October when the legislation took effect, was shifted that month to a vendor basis to take advantage of more favorable federal matching. The second service required several months of work and planning before it could be put into operation.

There could hardly be a more positive demonstration of inter-agency coordination, cooperation, pooling of ideas, and joint effort than went into the preparation for inauguration of the hospitalization program. Recognizing that there would be sufficient state funds this year to secure federal matching for some medical service other than nursing home care for old age pensioners, the Commissioner of Pensions and Security asked several medical groups to form an advisory committee to work with the Department on plans. Represented on the committee are the State Health Department; the Alabama Medical, Nursing, Dental, Pharmaceutical, Hospital, and Nursing Home associations; the University Hospital; and the Committee on Aging of the State of Alabama. The first question raised was: "What is the most pressing unmet medical need of Alabama's old age pensioners?"

Out of the work of this group with the Department of Pensions and Security came the agreement that hospitalization for acutely ill or injured old age pensioners was the most urgent need. The committee explored various ways of developing a hospital plan and recommended that the Health Department handle certain phases of the program for the Department of Pensions and Security. Committee action was later approved by the State Board of Pensions and Security.

Staff members from the Department of Pensions and Security, with final administrative responsibility for the program, and from the Health Department, which agreed to handle certain medical aspects, worked closely together in setting up the procedures for its operation. Particular tribute is due to Dr. D. G. Gill, State Health Officer, and his staff not only for their help in working out necessary agreements and especially the medical details but also for their continuing role in the actual operation of the program.

The Health Department works directly with participating hospitals, entering into written agreements with each (which include rates to be paid for pensioners), and verifies and approves claims. The basis for the Health Department's approval includes whether the physician is duly licensed, whether the rate charged is correct, whether the diagnosis is within the program's limits, and whether the number of days' hospitalization is reasonable in line with that diagnosis. A medical social worker in the Pensions and Security Department acts as liaison with the Health Department on matters pertaining to the program. It is believed that continued cooperation between the two agencies will lead to strengthening of the program and its establishment on a solid foundation.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	May	June	*E. E. June
Tuberculosis	143	117	210
Syphilis	117	118	160
Gonorrhea	327	296	364
Chancroid	0	6	5
Typhoid fever	0	1	6
Undulant fever	0	0	2
Amebic dysentery	8	3	1
Scarlet fever and strep. throat	48	39	35
Diphtheria	2	2	4
Whooping cough	9	9	55
Meningitis	4	3	9
Tularemia	0	0	0
Tetanus	1	0	1
Poliomyelitis	0	1	10
Encephalitis	1	0	1
Smallpox	0	0	0
Measles	478	351	575
Chickenpox	161	31	72
Mumps	77	23	121
Infectious hepatitis	139	160	27
Typhus fever	0	1	1
Malaria	0	0	0
Cancer	457	703	491
Pellagra	0	2	0
Rheumatic fever	27	21	7
Rheumatic heart	34	20	16
Influenza	26	20	67
Pneumonia	148	111	162
Rabies—Human cases	0	0	0
Pos. animal heads	3	5	9

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

* * *

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

June 1961

Examinations for malaria	21
Examinations for diphtheria bacilli and Vincent's	20
Agglutination tests	514
Typhoid cultures (blood, feces and urine)	452
Brucella cultures	1
Examination for intestinal parasites	2,700
Darkfield examinations	3
Serologic tests for syphilis (blood and spinal fluid)	25,008
Complement fixation tests	109
Examinations for gonococci	1,795
Examinations for tubercle bacilli	4,128
Examinations for Negri bodies (smears and animal inoculations)	229
Water examinations	2,638
Milk and dairy products examinations	4,007
Miscellaneous examinations	3,533
Total	45,158

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH
STATISTICS AND COMPARATIVE DATA,
APRIL 1961

Live Births Deaths Causes of Death	Number Registered During April 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live births	5,898	3,710	2,188	21.7	21.8	22.6
Deaths	2,320	1,480	840	8.5	8.8	8.8
Fetal deaths	128	57	71	21.2	21.9	20.8
Infant deaths—						
under one month	132	65	67	22.4	20.2	19.8
under one year	190	85	105	32.2	30.8	30.7
Maternal deaths	5	2	3	8.3	6.7	4.9
Causes of Death						
Tuberculosis, 001-019	27	12	15	9.9	8.6	6.4
Syphilis, 020-029	7	3	4	2.6	1.1	3.0
Dysentery, 045-048					0.4	0.4
Diphtheria, 055						
Whooping cough, 056					0.4	0.4
Meningococcal infections, 057	1	1		0.4	0.4	0.4
Poliomyelitis, 080, 081						0.4
Measles, 085	2	2		0.7		0.8
Malignant neoplasms, 140-205	316	221	95	116.3	116.3	121.1
Diabetes mellitus, 260	31	23	8	11.4	10.8	16.6
Pellagra, 281						0.4
Vascular lesions of central nervous system, 330-334	338	206	132	124.4	107.8	113.0
Rheumatic fever, 400-402	4		4	1.5	1.5	1.1
Diseases of the heart, 410-443	780	549	231	287.1	292.7	301.1
Hypertension with heart disease, 440-443	193	96	97	71.0	51.8	57.3
Diseases of the arteries, 450-456	56	40	16	20.6	19.0	18.5
Influenza, 480-483	10	5	5	3.7	15.3	3.4
Pneumonia, all forms, 490-493	50	21	29	18.4	35.8	21.5
Bronchitis, 500-502	6	4	2	2.2	3.4	2.3
Appendicitis, 550-553					1.1	0.4
Intestinal obstruction and hernia, 560, 561, 570	11	6	5	4.0	3.4	6.0
Gastro-enteritis and colitis, under 2, 571.0, 764	6	2	4	2.2	2.6	2.3
Cirrhosis of liver, 581	10	8	2	3.7	5.6	7.9
Diseases of pregnancy and childbirth, 640-689	5	2	3	8.3	6.7	4.9
Congenital malformations, 750-759	22	16	6	3.7	4.1	3.7
Immaturity at birth, 774-776	38	21	17	6.4	6.2	7.0
Accidents, total, 800-962	162	109	53	59.6	50.0	56.6
Motor vehicle accidents, 810-835, 960	71	55	16	26.1	18.6	26.4
All other defined causes	147	91	56	54.1	140.9	130.5
Ill-defined and unknown causes, 780-793, 795	120	41	79	44.2	37.3	38.5

*Rates: Birth and death—per 1,000 population
 Infant deaths—per 1,000 live births
 Fetal deaths—per 1,000 deliveries
 Maternal deaths—per 10,000 deliveries
 Deaths from specified causes—per 100,000 population



BOOK REVIEWS

Your Mind Can Make You Sick or Well. By Curt S. Wachtel, M. D. Price, \$4.95. Prentice-Hall, Inc., New York, N. Y. 1959.

The title of this book represents the author's purpose as well as his style. He has written a self-help book in the field of psychosomatic medicine, and he has a flair for expressing his advice in dramatic terms. Books on psychiatric subjects written for the lay public usually seem to come from the pens of psychoanalytically oriented psychiatrists. This volume is an exception in that Doctor Wachtel, though well acquainted with psychoanalytic knowledge, makes extensive use of a Meyerian, psychobiologic approach. He has prepared a chronologic "Life Chart" which the reader is to fill in, listing significant experiences during every year of his life. This "Self-X-Ray" will "bring out the causal relationships between your health problems and your outer and inner life, thus exposing the root of your troubles." It would appear to this reviewer that Dr. Wachtel, though frequently stressing the role of the physician in the cure of psychosomatic illness, has a somewhat excessive trust in the ability of the patient with a psychosomatic problem to help himself. He encourages the reader to interpret his Life Chart himself, and even to "interpret his dreams in a scientific manner", giving examples for the latter purpose. Once the patient attempts to probe what is not conscious, he should surely have some guidance.

The author has succeeded, however, in his primary purpose of writing a practical book, with suggestions that many patients will be able to utilize. He speaks from a background of wide experience in medical practice. He is quite convincing in teaching the reader to accept the point of view which has come to be known as Psychosomatic Medicine. Many physicians may want to make use of this book to explain the nature of so-called functional disorders to their patients, and it may also be recommended for the dependent person who finds it difficult to cooperate in psychiatric therapy and assumes an entirely passive attitude.

Henry Spira, M. D.

* * *

Drugs of Choice, 1960-1961. By Walter Modell, M. D., editor; and forty six other physician contributors. Second edition. Cloth. \$13.50. Pp. 958. The C. V. Mosby Company, St. Louis, 1960.

This reference book is better not read in its entirety from chapter one through chapter forty two, but rather in sections. The prefaces, (1958-1959, and 1960-1961), the table of contents, and chapters one and two should, however, be read by all who intend to use the conveniently catalogued information in the remaining chapters.

Physicians engaged in General Practice and Internists will find most use for this text. Yet, so wide is the range of drugs treated upon, that the specialties from Tropical Medicine and Public Health to Obstetrics and Gynecology will also find much interesting information.

Forty seven contributors have given their opinions on drugs useful in many fields. Their contributions have been partitioned into chapters dealing with types of drugs, types of diseases, disorders referable to organs or to systems. There is some overlapping. The titles of the chapters plus the index make it easy to find information concerning a specific drug or drugs recommended for a particular situation.

Perhaps this volume will help many practitioners to take a more objective view of the choice of drugs in every day practice. It attempts to bring order from the occasional chaos arising from similar and related drugs available in ever increasing quantity. There is enough pharmacology, physiology, and endocrinology given to establish the individual contributors cases. The overall treatment of a disease or syndrome will rarely be found.

The text is very suitable for hospital libraries and the offices of Internists and General Practitioners.

W. L. Smith, M. D.

* * *

W. B. SAUNDERS COMPANY features . . . the following recent books in their full page advertisement appearing elsewhere in this issue:

Cherniack and Cherniack—Respiration in Health and Disease: Clearly explains the mechanisms by which pathological processes produce clinical findings in respiratory disease.

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THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

September 1961

No. 3

Clinical And Experimental Studies With A New Progestogen—Dimethisterone

CETIN K. AYDAR, M. D.

ROBERT B. GREENBLATT, M. D.

Augusta, Georgia

Ethisterone, the first synthetic progestogen, was introduced by Inhoffen and Hohlweg in 1938.¹ It was found to be 5 times more effective than progesterone when administered orally, and one fifth as effective as parenteral progesterone.^{2, 3} More effective oral progestins have been sought and many such agents have become available for clinical use (Fig. 1). Dimethisterone 6a, 21-dimethylethisterone or 6a-methyl, 17a (1-propynyl) testos-

terone) was synthesized in 1957 by David et al., who found it 12 times more potent than ethisterone when tested by the McPhail's modification of the Clauberg test.^{4, 5} The purpose of this communication is to render a clinical evaluation of dimethisterone as well as to report on its ability to maintain pregnancy in oophorectomized rabbits.

Materials and Methods

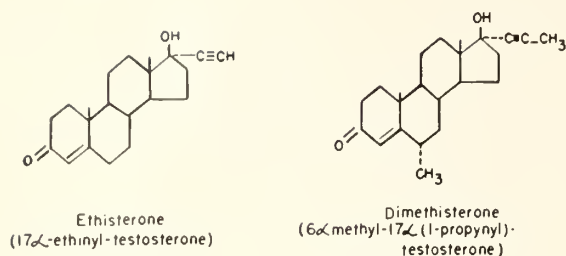
Maintenance of pregnancy in rabbits: In this experiment 11 pregnant rabbits were employed. Eight days after breeding, pregnancy was ascertained and bilateral oophorectomy was performed. After surgery, an aqueous solution containing 25 mg. dimethisterone and five micrograms of ethinyl estradiol was administered as part of the daily fluid intake until term, i.e., 31st day. The

From the Department of Endocrinology, Medical College of Georgia, Augusta, Georgia.

Delivered in part before the First Dixie Postgraduate Assembly, Birmingham, Alabama, July 14, 1961.

Generous supplies of dimethisterone were provided by Mead Johnson and Company, Evansville, Indiana.

Figure 1



animals either delivered litters on time or they were killed three days after term and an autopsy performed.

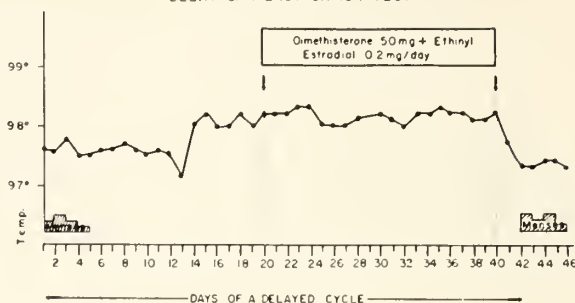
Clinical studies: Dimethisterone was administered orally in five to 100 mg. daily doses for periods varying from five days to 15 months, to 142 patients during 352 trials. dimethisterone was given either alone or with an estrogen or following a course of estrogens.

Results and Discussion

Maintenance of pregnancy in rabbits: Two of the eleven rabbits which received dimethisterone and an estrogen, produced normal litters. Nine rabbits were overdue and autopsies revealed whole or partial reabsorption of all the fetuses. Heretofore, substances like ethisterone and an estrogen have failed to maintain pregnancy in such experiments. It may be that the manner of administration, i. e., small amounts taken throughout the day in water, may have contributed to the successful outcome in two of eleven rabbits. The water intake was not well controlled, but at least it is indicative that maintenance of pregnancy may be possible with many other progestational agents if the route and manner of administration is improved. This problem will receive further study.

Clinical Observations

Delay of Menstruation Test: One of the properties of a potent progestational agent is its ability to substitute for the regressing corpus luteum when administered with an estrogen.⁶ The drug is given for 20 days beginning about six days after ovulation and

Figure 2
DELAY OF MENSTRUATION TEST

the test is considered successful if menses is delayed until after termination of medication. Varying doses of dimethisterone were given to 14 patients in 21 separate trials with or without estrogens. Menses were successfully delayed in five of 14 patients until one to two days after completion of the course of treatment. All of these patients received ethinyl estradiol (EE) in doses ranging from 0.1 mg. to 0.3 mg. with 25 to 75 mg. per day of dimethisterone (Fig. 2). Three of these patients became pregnant during the course of therapy with no known untoward effects. Another patient had to discontinue the medication after the third day because of nausea and nervousness. In the remaining five no delay was obtained on a dosage range of ten to 30 mg. dimethisterone and 0.0 to 0.1 mg. ethinyl estradiol, or estrogen pellets, or estradiol 1.5 mg. per day.

The induction of withdrawal bleeding in amenorrhea: A total of 17 amenorrheic patients were given 74 courses of therapy with five to 50 mg. of dimethisterone. In each case the progestogen was given for five days with or without estrogens. All patients given 10 mg. or more of dimethisterone with or without estrogen had adequate withdrawal bleeding periods except two. Dosage of both of these were 25 mg. dimethisterone with 0.1 mg. EE per day for five days. Failure of withdrawal bleeding occurred in only three other patients and each of these received only five mg. of dimethisterone for five days. The attempt to induce withdrawal periods in amenorrheics was successful in 69 of 74 trials.

On the basis of the above data it would appear that 93 per cent success rate may be pre-

dicted in all patients given 10 mg. or more of dimethisterone per day for five days. Use of estrogen would seem not to influence results to any marked degree, provided the patient has adequate endogenous estrogens.

Endometriosis: Three patients have been treated for endometriosis for four, eight, twelve months respectively, by continuous suppression of ovulation and induction of pseudopregnancy. The patients received 25-100 mg. of dimethisterone with 0.15 to 0.4 mg. EE or 0.3 mg. EE3ME (3 methyl ether of ethinyl estradiol) daily. All three patients responded well to treatment and became asymptomatic. One of the patients spotted on 37.5 mg. dimethisterone and 0.15 mg. EE, but the spotting was controlled effectively when the medication was increased to 50 mg. and 0.2 mg. respectively. One of the patients complained of moderate breast enlargement and mastodynia. There was no

gain in weight in the patient who received medication for 12 months in contrast to a 20 lb. gain on norethindrone for nine months. The results were beneficial with both types of medication (Table 1).

Functional uterine bleeding: Two patients were treated with 25 to 50 mg. dimethisterone with the addition of 0.1 to 0.2 mg. of ethinyl estradiol per day for five to eight days. The results were satisfactory in both cases and bleeding was controlled within 48 hours. Both patients had withdrawal periods two to three days after cessation of medication. The patient who received 25 mg. of dimethisterone and 0.1 mg. EE had a prolonged withdrawal period which was somewhat excessive.

Thermogenic response: Four amenorrheic patients with a persistent uniphasic type of basal temperature record kept basal tempera-

TABLE 1
TREATMENT OF ENDOMETRIOSIS

Patient	Medication		Duration of RX	Results
	Dimethisterone	Estrogens		
No. 1-B., 19 yrs.	37.5 mg./day	0.15 mg./d EE	2 mos.	Did well, no pain. Slight spotting at the end of 2nd month.
	50 mg./day	0.2 mg./d EE	2 mos.	Dosage increased, spotting stopped. Endometrial biopsy at end of 4th month of therapy was secretory.
No. 2-C., 25 yrs.	50 mg./day	0.2 mg./d EE	6 mos.	Asymptomatic. Slight spotting at end of 5th month. Medication discontinued. Normal withdrawal period occurred.
	75 mg./day	0.3 mg./d EE	1 mo.	Asymptomatic. Breasts enlarged.
	100 mg./day	0.4 mg./d EE	1 mo.	Asymptomatic.
No. 3-M., 36 yrs.	10 mg./day	0.2 mg./d EE3ME	7 days	Breakthrough bleeding on 7th day.
	50 mg./day	1 mg./d EE3ME	5 days	Dosage increased to stop bleeding.
	20 mg./day	0.2 mg./d EE3ME	2 mos.	Asymptomatic. Some spotting.
	25 mg./day	0.2 mg./d EE3ME	2 mos.	Asymptomatic. Some spotting.
	35 mg./day	0.09 mg./d EE3ME	2 mos.	Asymptomatic. Some spotting.
	25 mg./day	0.3 mg./d EE3ME	9 mos.	Asymptomatic. No spotting. Pelvic mass gone. Felt well. No weight gain. Endometrial biopsy was secretory. Two months after cessation of medication, normal menses returned with mild pain.

EE=Ethinyl Estradiol

EE3ME=Ethinyl Estradiol-3-Methyl Ether

ture charts for six courses of therapy. Thermogenic response was noted in all patients, when 10 mg. or more of dimethisterone was employed.

Dimethisterone is not estrogenic: Five milligrams of dimethisterone per day was administered to a 60 year old post-menopausal female for three weeks. Vaginal smear was of the castrate type prior to the medication and remained so during the whole course of therapy.

Lack of adrenal suppression: One female patient, aged 6 years with congenital adrenal hyperplasia and heterosexual precocity, was given dimethisterone in doses of 40 mg. per day for 30 days. Urinary 17-ketosteroid and pregnanetriol excretions were not altered from values obtained before dimethisterone. Urinary assays were repeated after administering a dosage of 45 mg. per day for 32 days followed by 60 mg. per day for 30 days. Again adrenal suppression could not be demonstrated by urinary 17-ketosteroid or pregnanetriol values. Thus, it must be concluded that dimethisterone did not cause adrenal suppression in the doses employed.

Inhibition Of Ovulation In Various Gynecological Disorders

Dimethisterone and an estrogen were employed in the management of essential or membranous dysmenorrhea, premenstrual tension, mittelschmerz, contraception and to rest the pituitary-ovarian axis in the hope of overcoming sterility. The principle involved in the use of dimethisterone in combination with an estrogen is the inhibition of ovulation. Inhibition of ovulation has been reported earlier by using different progestational agents with an appropriate estrogen.^{7, 8, 9} It is the opinion of the authors that estrogen is the main factor responsible for inhibition of ovulation. Progestogens lend a constancy to the cycle and withdrawal bleeding occurs on discontinuation of medication. In the normal ovulatory cycle estrogen is secreted in the follicular phase and this is supplemented by progesterone in the luteal phase. It appeared

that it was probably more physiologic to administer estrogen alone for inhibition of ovulation from day five to 20 of the cycle followed by a five day course of a progestational agent. Such a plan assures a constancy to the cycle and is seldom complicated by break-through bleeding, and a withdrawal period occurs readily.

In the present study, administration of 0.1 mg. of EE daily from day five to 19 of the cycle followed by 25 mg. of dimethisterone daily from day 20-24 proved to be an excellent regimen. Fifty patients received 167 courses of therapy for different gynecological disorders and for contraception. Two to three days after completion of dimethisterone a withdrawal period occurred. Only nine trials were discontinued during the estrogen part of therapy because of nausea and break-through bleeding. Excessive weight gain was not noted in any patient. In two cases who received 12 to 15 months of therapy respectively, weight remained constant.

Dysmenorrhea (Membranous and Essential): Membranous dysmenorrhea has been described as the painful passage of an endometrial cast of the uterus during menstruation. The endometrial cast is also referred to as a decidual cast. Membranous dysmenorrhea is possibly due to hyperresponsiveness to endogenous progesterone. The administration of large doses of progesterone or a potent progestogen for 15 to 30 days has been followed by the passage of a decidual cast and results in a clinical picture similar to membranous dysmenorrhea. The successful management of patients with membranous dysmenorrhea, by the continuous suppression of ovulation, was established by one of the authors in 1954.¹⁰ After discontinuation of therapy, ovulatory menses usually set in within a few months. The administration of anti-ovulatory agents, which are also potent progestational agents, from day five to day 25 of the cycle is contraindicated in such patients, since cast formation is aggravated rather than suppressed.

Essential dysmenorrhea, on the other hand, is most likely due to tetanic uterine contractions at the luteal phase, as shown by Wilson

and Kurzrok¹¹ and reflected in the patients' awareness of severe pain and discomfort just before and during the first day of menses. Wilson¹¹ and then Sturgis and Albright¹² relieved dysmenorrhea by inhibiting ovulation with estrogens.

In this study estrogen (0.1 mg. EE daily) was administered from day five to day 19 and this was immediately followed by administration of the progestogen (25 mg. dimethisterone) from day 20 to day 24. Fourteen pa-

tients received 40 courses of therapy with this regimen. Ten of these patients experienced relief of their symptoms and did not have any side effects. Four patients discontinued the treatment because of nausea in three, and breakthrough bleeding in one, while on the estrogen part of the regimen (Table 2).

Premenstrual Tension: Eleven patients were treated in 46 courses by inhibiting ovulation by using EE followed by 25 mg. of dimethisterone. Nine patients had good re-

TABLE 2
INHIBITION OF OVULATION IN TREATMENT OF DYSMENORRHEA

Patient	Age	Estrogen d. 5-19	Dimethisterone d. 20-24	No. of Cycles	BTR	Results
No. 1—J.J.	26	0.1 mg. EE*	25 mg.	6	Anovulatory	Good
No. 2—J.B.	40	0.1 mg. EE*	25 mg.	6	Anovulatory	Good
No. 3—C.A.	40	0.1 mg. EE*	25 mg.	3	Anovulatory	Good
No. 4—R.G.	21	0.1 mg. EE*	25 mg.	1	Anovulatory	Good
No. 5—H.P.	30	0.1 mg. EE*	25 mg.	6	Anovulatory	Good
No. 6—E.R.	43	0.1 mg. EE*	25 mg.	1	Anovulatory	Good
No. 7—B.T.	29	0.1 mg. EE*	25 mg.	6	Anovulatory	Good
No. 8—B.B.	21	0.1 mg. EE*	25 mg.	1	Anovulatory	Good
No. 9—W.—	15	0.1 mg. EE*	25 mg.	3	Anovulatory	Good
No. 10—M.—	30	0.1 mg. EE*	25 mg.	3	Anovulatory	Good
No. 11—P.S.	26	0.1 mg. EE*	25 mg.	1	Anovulatory	Discontinued—Nausea on EE
No. 12—M.M.	20	0.1 mg. EE*	25 mg.	1	Anovulatory	Discontinued—Nausea on EE
No. 13—P.N.	18	0.1 mg. EE*	25 mg.	1	Anovulatory	Discontinued—Nausea on EE
No. 14—G.C.	40	0.1 mg. EE*	25 mg.	1	Anovulatory	Discontinued—BTB ¹ on EE

* EE=Ethinyl Estradiol

¹ BTB=Breakthrough Bleeding

TABLE 3
INHIBITION OF OVULATION IN TREATMENT OF PREMENSTRUAL TENSION

Patient	Age	Estrogen d. 5-19	Dimethisterone d. 20-24	No. of Cycles	BTR	Results
No. 1—F.K.	30	0.1 mg. EE	25 mg.	3	Anovulatory	Good
No. 2—B.B.	37	0.1 mg. EE	25 mg.	10	Anovulatory	Good
No. 3—L.W.	28	0.1 mg. EE	25 mg.	15	Anovulatory	Very good, no weight gain
No. 4—K.G.	40	0.1 mg. EE	25 mg.	6	Anovulatory	Good
No. 5—G.L.	34	0.1 mg. EE	25 mg.	1	Anovulatory	Good
No. 6—C.—	16	0.1 mg. EE	25 mg.	1	Anovulatory	Good
No. 7—T.	23	0.5 mg. Estriol	20 mg.	1	Anovulatory	Good
No. 8—D.A.	39	0.1 mg. EE	25 mg.	6	Anovulatory	Fair
No. 9—S.H.	13	0.1 mg. EE	25 mg.	1	Anovulatory	Fair
No. 10—E.H.	35	0.1 mg. EE	25 mg.	1	Anovulatory	Discontinued, nausea on EE
No. 11—D.Mc.	28	0.1 mg. EE	25 mg.	1	Anovulatory	Discontinued, nausea on EE

EE=Ethinyl Estradiol

sults and became asymptomatic in 44 courses. There was no weight gain in a patient who received medication for 15 months. Only two patients discontinued the treatment because of nausea while on estrogen (Table 3).

Contraception: Inhibition of ovulation for contraceptive purposes was tried in 14 patients during 53 courses. In 11 patients with a total of 50 courses of therapy, ovulation did not take place. Three patients had to discontinue treatment: two because of nausea and one because of breakthrough bleeding while on estrogen (Table 4).

Unexplained Infertility: Rock and his group have reported that about 20-30 per cent of patients with unexplained infertility conceived within several months after a three to six month course of synthetic progestogens for induction of pseudopregnancy.¹³ This therapeutic test is often referred to as the Rock rebound phenomenon and is probably due to "resting" of the pituitary-ovarian axis or modifying pituitary activity. The regimen is similar to that used for dysmenorrhea and six patients have been treated by this method in 17 courses. Ovulation was inhibited in each

course and one of the patients became pregnant one month after therapy. There were no side effects in any patient.

Mittelschmerz: At the time of ovulation some individuals experience severe pelvic pain which may be incapacitating for one or more days each month. This clinical entity is known as "mittelschmerz" (middle of the month pain) and may simulate acute appendicitis. In severe recurring cases, the pain may be alleviated by the inhibition of ovulation for several consecutive months. After the cessation of therapy symptoms may or may not return. The method of inhibition of ovulation is the same as in dysmenorrhea. In this study, five patients have been treated for 11 courses by inhibition of ovulation. All of the patients responded satisfactorily to therapy; there were no side effects (Table 5).

Conclusions and Summary

1. Dimethisterone (6a-methyl, 17a (1-propynyl) testosterone) is an orally effective progestogen. It induces a thermogenic response and has no estrogenic activity, nor does it suppress adrenal activity.

TABLE 4
INHIBITION OF OVULATION FOR CONTRACEPTION

Patient	Age	Estrogen d. 5-19	Dimethisterone d. 20-24	No. of Cycles	BTR	Results
No. 1—E.P.	18	0.1 mg. EE	25 mg.	6	Anovulatory	
No. 2—J.A.	25	0.1 mg. EE	25 mg.	3	Anovulatory	
No. 3—E.F.	29	0.1 mg. EE	25 mg.	8	Anovulatory	Some nausea at first; none now
No. 4—E.H.	26	0.1 mg. EE	25 mg.	6	Anovulatory	
No. 5—K.	20	0.1 mg. EE	25 mg.	6	Anovulatory	
No. 6—R.	24	0.1 mg. EE	25 mg.	6	Anovulatory	
No. 7—E.W.	30	0.1 mg. EE	25 mg.	3	Anovulatory	
No. 8—B.S.	24	0.1 mg. EE	25 mg.	1	Anovulatory	
No. 9—K.	27	0.1 mg. EE	25 mg.	3	Anovulatory	
No. 10—B.R.	27	0.1 mg. EE	25 mg.	3	Anovulatory	
No. 11—D.C.	28	0.1 mg. EE	25 mg.	5	Anovulatory	Breast soreness on Dimethisterone
No. 12—G.	22	0.1 mg. EE	25 mg.	1	Anovulatory	Discontinued—Nausea on EE
No. 13—A.P.	29	0.1 mg. EE	25 mg.	1	Anovulatory	Discontinued—Nausea on EE
No. 14—C.K.	34	0.1 mg. EE	25 mg.	1	Anovulatory	Discontinued—breakthrough bleeding on EE

EE=Ethinyl Estradiol

TABLE 5
INHIBITION OF OVULATION IN TREATMENT OF MITTELSCHMERZ

Patient	Age	Estrogen d. 5-19	Dimethisterone d. 20-24	No. of Cycles	BTR	Results
No. 1—R.	21	0.1 mg. EE	25 mg.	3	Anovulatory	Good
No. 2—M.	30	0.1 mg. EE	25 mg.	3	Anovulatory	Good
No. 3—L.J.	18	0.1 mg. EE	25 mg.	1	Anovulatory	Good
No. 4—O.	29	0.1 mg. EE	25 mg.	3	Anovulatory	Good
No. 5—V.	29	0.1 mg. EE	25 mg.	1	Anovulatory	Good

EE=Ethinyl Estradiol

- Eleven pregnant rabbits were oophorectomized and maintained on dimethisterone in combination with an estrogen orally. In two of these rabbits the pregnancies went on to term resulting in normal litters.
- In five patients successful delay of menses was induced by a daily dose of 25 to 75 mg. of dimethisterone with 0.1 to 0.3 mg. ethinyl estradiol (EE) when started 6 to seven days after ovulation.
- Seventeen amenorrheic patients received 74 courses of dimethisterone to induce withdrawal periods. The attempt was successful in 69 of 74 trials, with 10 mg. or more per day for five days.
- Three patients were treated for endometriosis with 25 to 100 mg. of dimethisterone and 0.15 mg. to 0.4 mg. of EE or its equivalent daily. The continuous suppression of ovulation and induction of pseudopregnancy was achieved and patients became asymptomatic.
- Twenty-five to fifty milligrams of dimethisterone with the addition of 0.1 mg. to 0.2 mg. EE per day was given to two patients for functional uterine bleeding. In both cases the bleeding was controlled within 48 hours.
- Inhibition of ovulation with an estrogen followed by dimethisterone has been tried in 50 patients during 167 trials for the treatment of various gynecological disorders and for contraception. In 158 trials ovulation was inhibited successfully while in the remaining nine, treatment was discontinued due to nausea or breakthrough bleeding.

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Bilateral Tubal Pregnancy

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Bilateral concurrent tubal ectopic pregnancies are very rare and through 1952 only one hundred and forty-two cases had been reported.¹ Such an instance is herein presented as likely to be of more than passing interest.

Mrs. C. M., a 29 year old white female, had previously delivered two normal children after uneventful pregnancies and labors. Two and one-half years prior to admission, she had undergone low cervical cesarean section for abruptio placenta with profuse hemorrhage. Twenty-five hundred cc of blood was

given. The infant was in poor condition and survived only twenty hours. Six months later she had been seen with mild pelvic inflammatory disease which appeared to clear rapidly on antibiotics.

Four days before admission she was seen in our clinic with moderate pain in the right lower quadrant which was described as constant, dull, and aching in character with intermittent severe cramping. Her period was ten days late but there was some spotting of dark blood. Menstrual history had been normal otherwise since recovery from the cesarean section. On pelvic examination, the uterus was soft and slightly enlarged. There was some tenderness in the left adnexa. The right tube was described as being swollen, hard, and very tender. The diagnosis of unruptured ectopic pregnancy was considered,

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but because of bilateral tenderness, the tentative diagnosis was early pregnancy and pelvic inflammatory disease. She was given penicillin and analgesics and advised to rest and return in two days.

On return, she appeared to be clinically improved. The uterus was described as being slightly enlarged, and there was still some adnexal tenderness on the right, but there had been subsidence of the tenderness on the left. Her antibiotic therapy was continued and she was seen again two days later. At this time, she complained of increasingly severe low abdominal pain with spotting of bright red blood. She was admitted for observation and further study.

In the hospital the symptoms subsided somewhat and the bleeding stopped. Her hemoglobin was 11.5 with a hematocrit of 40 volumes per cent, and these values remained stable. The WBC count was 5,800 with a normal differential. A frog test was negative. The differential diagnosis at this time was: (1) Pelvic inflammatory disease with early pregnancy, (2) pelvic inflammatory disease with threatened abortion, or (3) ectopic pregnancy in the right tube. A cul de centesis was entirely negative with no free blood found in the peritoneal cavity. At this time a small mass was described in the left adnexa also.

Four days after admission severe pain recurred and pelvic examination was repeated. The previously described mass in the right adnexa was thought to be as large as on the original examination and was quite tender. At this time, the diagnosis of unruptured tubal pregnancy on the right was thought to be most probable.

The next day exploratory laparotomy was carried out under general anesthesia. There was about 50 cc of dark blood in the peritoneal cavity which apparently had come from the fimbriated end on the right. An unruptured ectopic pregnancy was found in the right tube, and the left tube was noted to be identical in appearance. The tubal masses measured 5.5 x 4 x 3.5 cm., and appeared to be

filled with blood. The fimbriated end of the left tube was closed. The ovaries and the uterus were entirely normal and there were no adhesions present from the previous cesarean section. A bilateral salpingectomy was done. Hysterectomy was considered but not done because it was felt that this patient would adjust more satisfactorily with a normal continuation of menstrual function. Appendectomy was done also.

The tissue was submitted to the pathology department of the Mobile Infirmary which reported as follows:

"The specimen consists of two formalin-fixed fallopian tubes which are definitely swollen and have a smooth, brownish-gray appearance on their outer surfaces. Their fimbriated ends are closed. Each one measures approximately 5.5 x 4 x 3.5 cm. Their linings are smooth but the lumens are swollen and have blood clots present in them.

Also submitted is an appendix measuring 2.5 x 0.5 cm. It has a smooth, grayish-white outer surface and the lumen has whitish material in it. The tip is practically completely obliterated and the mucosa is grayish white. Representative material is embedded for microscopic study.

Based on gross and microscopic examination:

DIAGNOSIS: TWO FALLOPIAN TUBES WITH BILATERAL TUBAL PREGNANCIES; APPENDIX.

COMMENT: Both fallopian tubes reveal blood clots with chorionic villi in their lumens. This is indicative of bilateral tubal pregnancies."

SUMMARY: This case report illustrates a very unusual condition; the simultaneous occurrence of bilateral tubal pregnancies which appear both grossly and microscopically to be of the same gestational age.

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The Diagnosis Of Occupational Disease

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In this paper I propose to present a few of the principles and concepts which I hope you will find useful in the diagnosis of occupational disease due to the absorption of excessive quantities of chemical agents found in typical working environments. In many respects, the approach to such diagnoses seems strange to most physicians whose contact with patients presenting such disorders is only sporadic. On the other hand, the use and understanding of certain common epidemiological techniques should be extremely helpful.

The Air Force Logistics Command is one of the nation's largest employers and, consequently, we, of its medical service, have had an opportunity to gain a considerable amount of experience in the care and handling of actual and alleged occupational disease and injury. As a matter of general orientation,

the Air Force Logistics Command, with its headquarters at Wright-Patterson Air Force Base near Dayton, Ohio, is responsible for a budget of approximately 6 billion dollars a year. It employs approximately 150 thousand and civilian employees and 18 thousand military. These personnel are scattered throughout ten bases in the Continental United States and in two principal areas overseas—one at Chateauroux, France, and the other in Japan. From a medical responsibility standpoint, we are concerned only with the health problems of those AFLC employees located in the Continental United States. The overseas theatre medical services are responsible for medical care of the Logistics Command employees stationed overseas. Our medical budget for the group in the Continental United States is approximately 10 million dollars a year, excluding salaries of military personnel.

As you know, one of the prime Air Materiel Areas is here at Mobile. This AMA is responsible for assisting programs such as that of photographic support of certain satellites. Mobile was also an early entrant into the Space Program and assumed support of the Jupiter Program in the realignment of 1958.

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As the technology of aerospace systems has developed, more and more chemical compounds have been studied and put to use for all kinds of different purposes. Running parallel to this development has been a concerted effort on the part of various medical disciplines to study the effects of these compounds upon personnel who may become exposed either in the normal course of employment or under accidental or unusual circumstances. After the results of such toxicological research studies have been made, protective devices are designed to protect the employee from his environment. Such devices may take the form of engineering control devices at the source to isolate the chemical from the employee's environment, or they may take the form of personal protective equipment, such as, protective clothing or respiratory devices of one kind or another, to protect the employee from inhaling or contacting any toxic materials in that environment. In spite of all of these precautions, accidents will occur or carelessness on the part of the employee will result in exposures to such materials from time to time. Generally, it is under these circumstances that you as physicians will be called upon to see these employees as patients. It will then become your responsibility to know in sufficient detail the environment in which the employee is working so that you can accurately arrive at a reasonable diagnosis, can adequately treat the individual and, finally, can return him again to gainful employment.

During the past year, it cost the Air Force Logistics Command approximately 10 million dollars for compensation. Of course, the vast majority of these dollars involved cases resulting from traumatic injuries. As more and more chemicals appear on the horizon, there will undoubtedly be an increasing number of cases of alleged disability due to exposure to chemical agents.

It is to this problem that I now wish to address my remarks. The solutions to the problems of the diagnosis and causal relationship between chemical agents and specific syndromes must be established. In order to

establish such a diagnosis, there are six rules which are commonly used. These are:

1. Use Caution.
2. The agent must be capable of producing the syndrome.
3. The concentration must be adequate.
4. The time-dose relationship must be sufficient.
5. The "incubation period" must be adequate.
6. Other causes for the syndrome must be ruled out.

These factors follow much the same pattern as the postulates laid down by Koch in 1881. These postulates, as you know, were used to establish a causal relationship between a microorganism and a given disease.

First, Caution: One should be very careful to take an adequate occupational history. It is not enough, and, in fact, frequently misleading, to accept at face value the patient's impression or opinion of the chemicals with which he is working. In many instances, we have heard employees say that they were exposed to this chemical or that chemical only to find on further investigation that none of them could possibly be incriminated.

Similarly, one should not accept the job title as a description of the worker's activities or as being indicative of the chemicals to which he may be exposed. An employee demonstrating a marked anemia might report that he was working with cement. This obviously might be interpreted to mean "Portland Cement," but might in fact be actually a rubber cement utilizing benzol as a solvent. I know of another instance in which a supervisor informed me that he was using carbon tetrachloride in a cleaning operation. After I informed him that the material did not have the characteristic odor of carbon tetrachloride but rather that of trichloroethylene, he informed me, "Oh, that is the same stuff with a little perfume added to it."

I think that almost invariably you will find it necessary to check with the plant physician or the industrial hygiene engineer, who is responsible for the health of employees in

that particular work environment, to determine the exact nature of the chemicals to which the patient might be exposed.

Another caution. Some employees are "moonlighters." Others engage in avocations, particularly in their own do-it-yourself workshops, on weekends or in evenings after work. The safety devices and the equipment utilized under these circumstances are frequently far less effective than those provided on the job, if even present. I can remember back some years ago, here at Brookley, when one of the employees in the radium dial operation was found using the same radium paint in his kitchen at home and obviously not with the sophisticated ventilating equipment which was a necessity on the Base.

The third caution is that of the quantitative nature of the etiology of chemical intoxication. We, in the medical profession, have been accustomed to thinking of microorganisms as causal agents for many diseases. We are too often prone to convert directly to this train of thought when thinking of chemicals as etiological agents. We forget that chemicals do not have the reproductive power that microorganisms have! It is, therefore, mandatory that we recognize that a chemical, before it can become the cause of disease, must occur in the environment in sufficient quantities, must be absorbed in sufficient quantities, and must arrive at the organ or organ-system of insult in sufficient quantities to produce the syndrome in question. It is not enough to establish the existence of a chemical in the environment or even in an individual's body fluids or tissues. For example, civilized man is constantly exposed to lead in his food and in the air. If I were to take a blood-lead specimen of all of the people in this room, I would find that you would probably each have about 30 micrograms of lead per 100 cc of blood. This does not mean that any of you have lead poisoning. It does mean that you have been absorbing lead. It also means that you would have to absorb a great deal more than you are now absorbing in order to develop the syndrome of lead poisoning. This, in general, is true of all chemicals

which may be encountered in any work environment.

The Agent Must Be Capable Of Producing This Syndrome

Different chemicals or groups of chemicals produce different syndromes, different laboratory findings, and different pathological and pathophysiological changes. Some are fairly characteristic; some are not. Some depend upon the extent to which absorption has progressed.

Foulger, in his book, "Pathologic, Physiology-Mechanism of Disease,"¹ stated: "It is important to realize that there is no great difference between the results of continued exposure to chemicals of intensity short of those causing acute organic injury and the results of prolonged exposure to cold, to lack of oxygen, or to excessive physical labor, or indeed to the early states of infectious or metabolic diseases. Even when we pass from a stage of functional changes involved in the 'adaptation syndrome' to a state of actual organ damage, there is really no fundamental difference between the damage produced by chemicals and that caused by other types of disease. A chemical, like an infecting organism, may select one organ for its most pronounced action. Often, it is more selective than an infecting organism, but the pathological changes produced do not differ fundamentally from those already noted in infectious diseases. However, since even in obvious poisoning, the functional derangements produced by the chemicals are still important. Injudicious chemotherapy may be harmful in chemical poisonings to an extent which we are all apt to overlook, when in infectious disease, we aim to destroy the infecting agent."

The syndromes produced by relatively high concentrations of toxic chemicals for short periods of exposure vary with the chemical compound or combination of compounds concerned. The symptoms, as well as the clinical and laboratory findings, will depend on the organ or organ-system of primary involvement which may be fairly specific for each compound. In his textbook, "Practice of

Industrial Medicine,"² Johnstone makes the point that "Chemicals bearing similar names and having similar formulas do not necessarily give rise to similar toxic reactions. The 'Law of Specificity' requires that one ask and have answered such questions as: Is the suspected substance known to have toxic properties? Did the reaction in the case under study conform to known established reactions? Is the suspected chemical capable of being absorbed? If so, what system or systems is it known to affect? Did an undue exposure actually occur? (There is a marked difference between exposure and overexposure.) Are the laboratory data confirmatory of the toxication of systemic injury?"

I can recall of a case coming to a compensation court in which an employee had embedded under his skin lead from a pencil. When an expert medical witness was asked in a hypothetical question of "Could this amount of lead, absorbed by a normal male adult, produce a syndrome of lead poisoning," the answer in quantitative terms was, "Yes." This probably sounded reasonable to the laymen listening to the case until it was pointed out by an analytical chemist that the content of the lead in a lead pencil is "zero." It is, however, 100 percent graphite!

The Concentration Of The Agent

It is quite obvious that a sufficiently low concentration of an agent can be withstood for long periods of time without any adverse effects. So, it is important to know what the actual concentration in the working environment, or, rather, in the breathing zone, of the employee has been. This is the reason that certain bench marks have been established by national agencies which are known as "MACs" or Maximum Tolerance Levels. These are concentrations to which an employee can be exposed eight hours a day for an entire working life of 30 to 40 years without producing any adverse effect. It is obvious also that we can tolerate higher concentrations for shorter periods of time.

It is in this field that you should realize, at least in Air Force operations, that it is pos-

sible to obtain the assistance of industrial hygiene engineers and industrial hygiene chemists who can make these determinations available for you as well as to materially assist you in your diagnosis. They can assist you in eliminating from your consideration selected chemicals, either on the basis of their existence or their concentration in the working environment. All base-level industrial hygiene engineers have at their disposal the chemical analytical assistance of Environmental Health Laboratories which we have located at Kelly Air Force Base, San Antonio, Texas, and at McClellan Air Force Base near Sacramento, California.

The Time-Dose Relationship

This obviously is related directly to the concentration which I have just mentioned. It is quite important that one retain a clear concept of this. For example, the MAC of carbon monoxide in a working environment is presently established at 100 ppm. This does not mean that an individual cannot tolerate 200 ppm or 300 ppm without suffering any adverse effect. One very good example of this is in the case of cigarette smoke. To those who do smoke, I would like to remind you that with each puff you take from a cigarette, you are inhaling approximately 2,000 ppm carbon monoxide. It is here that the factor of time-dose relationship enters, because you are not breathing that 2,000 ppm with every breath. The short-term rest that you get between each inhalation and also between each cigarette allows sufficient time to exhale and rid the body of enough carbon monoxide so you do not get any deleterious effects. The only exceptions that I can think of might be associated with cocktail parties with insufficient intervals between cigarettes. These same principles apply to other chemicals.

Incubation Period

The fifth criteria I have entitled the "incubation period." This is not a true incubation period in the sense used for microorgan-

isms which have the power of reproduction. In the case of microorganisms, as you well know, the number of them must increase to a point where they can produce sufficient organic damage to produce the syndrome. In the case of chemical agents, a finite period of time must intervene between the absorption of a sufficient amount of the chemical until the onset of the typical symptom-complex. This is particularly obvious in the case of one disease, Metal Fume Fever. It is very typical in these cases that the employee will come to work on Monday morning and be exposed to fumes such as zinc, during Monday's work-day. About two o'clock on Tuesday morning, he will wake up with a high temperature, malaise, some difficulty in breathing, coughing, and, perhaps, think he is coming down with a severe case of "flu." Within four, six, or eight hours, this symptom-complex will disappear without any therapy. He may go to work that day or the following day and be exposed to the same concentration of the offending agent and continue on without further symptomatology all week—take the weekend off—go to work on Monday—and again have a recurrence of this type on Tuesday morning. More frequently, such a recurrence would not occur without a somewhat longer absence from work, usually exceeding three days. Apparently, a moderate tolerance develops as exposure continues.

On the other hand, most chemical compounds will produce symptomatology relatively rapidly after exposure to high concentrations. This, of course, depends upon the chemical nature of the agent, the manner in which it is absorbed, and the organ system which it involves. One classic example is that due to the absorption of excessive amounts of organic lead, generally in the form of tetraethyl lead. A typical picture of this type of poisoning is one of an encephalopathy, an acute and violent mania. This has frequently been misinterpreted, in its initial stages, as an alcoholic intoxication. Many of these patients have been sent either to jail or the mental ward of a mental hospital. The onset of this phenomenon is generally four hours or so after significant exposure.

Other Causes Must Be Ruled Out

The last criteria is perhaps self evident in that "other causes must be ruled out." I suppose, in many respects, this is a two-way street. We have seen the errors made in both directions—lead poisoning, thought to be acute appendicitis or an acute gallbladder attack. I have just mentioned the confusion with acute psychotic states or alcoholic intoxication in organic lead poisoning. The dermatoses have also caused considerable confusion.

In conclusion, I hope that as you interview and examine your patients who may be employed here at Brookley or at any of the local industrial concerns, you will find useful the six criteria I have just discussed. Actually, you have a dual responsibility. The first—to your patient and the second—to management. The economic injustice of an erroneous diagnosis may exist in a delay involved in the assumption of liability by the appropriate carrier of compensation or disability insurance during which the worker and his family may be deprived of any source of income. On the other hand, you have a responsibility to management to protect his interests against any claim for compensation which may not be justified by the conditions of employment. Another responsibility to management which you must share is that of accurately observing the clinical syndrome and determining the etiology. The causal relationship may be subtle, but the knowledge of this relationship will enable us, the medical service and management to correct or improve the measures which are designed or should be designed to prevent adverse effects in the future and to arrive at reasonable and logical therapeutic regimes.

The contents of this article reflect the personal views of the author and are not to be construed as a statement of official Air Force policy.

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Editorials

NEWBURGH STORY

Things are not as peaceful as they used to be in a small city along the Hudson River in New York State.

The do-gooders, not only in that locale but all across the country, are up in arms over the City of Newburgh's effort to correct flagrant welfare abuses.

Upon learning that ninety-five per cent of the city's population was spending one-third of its money to support five per cent of the population, the City Council adopted a 13-point program to reduce this welfare burden caused by its "bums, chiselers and loafers," many of whom came to the town and remained for the deliberate purpose of living on relief.

Newburgh's new regulations call for a denial of relief if eligible persons refuse jobs. It also cuts off aid to mothers of illegitimate children if these women have any more babies out of wedlock. Newburgh also ruled that relief applicants new to the city must show they came with a firm offer of a job.

The list of restrictions on public welfare allotments also included:

A requirement that able-bodied men on relief work for the city forty hours per week.

Whenever possible, vouchers for food, rent, clothing, and other needs shall be substituted for cash payments.

Relief payments for any one family shall not exceed the take-home pay of the lowest paid city employee with a family of comparable size.

A provision that assistance to all persons, except those who are blind, aged, or disabled,

shall be limited to payments during a period of only three months in any one year.

In taking this action, the City Council knew it was defying state and federal welfare practices, plus a host of private and social agencies bent on increasing and enlarging social welfarism.

At a hearing before a special investigating committee of the New York State Welfare Board, the investigators refused even to listen to Newburgh city manager Joseph Mitchell's reasons for instituting the reform. They ruled the Newburgh reforms a violation of both federal and state laws.

It is a fine commentary on public morality in this country when a local community's effort to correct flagrant welfare abuses is declared illegal.

HALF OF AGED HAVE HEALTH COVERAGE

Forty-nine per cent of all Americans 65 years of age or older had health insurance protection against the costs of ill health at the beginning of 1960, the Health Insurance Association of America reported recently.

Of the 15.7 million persons in this age group, an estimated 7.7 million had health insurance, the Association said in issuing the first analysis made on a nationwide basis since early 1958 of the extent of health insurance coverage among "senior citizens." The report was based on coverage trends revealed in government and private surveys taken during the last decade and on developments in the health insurance business.

Because of accelerated activity by insuring organizations in this area, the growth of

health insurance protection among persons 65 and older during the past eight years has been at a more rapid pace than for the population as a whole, said the Association, which is composed of 270 insurance companies.

In early 1952, one out of every four senior citizens had health insurance, and now one out of two are so protected, said the HIAA. Over the same period, the growth in coverage for the total population was from nearly six out of every ten persons to a little more than seven out of ten.

In addition to the 49 per cent of the 65-and-over who now have health insurance, the Association said, another 15 per cent, or 2.4 million persons, are officially classified as indigent, and provision is made for their medical needs through Old Age Assistance, supported by Federal-State matching fund programs. Such persons also receive money for food, housing, clothing and other needs.

Government Surveys

According to the U. S. Department of Health, Education and Welfare, 26 per cent of senior citizens had health insurance in March 1952, and by September 1956 this figure had grown to 37 per cent.

The most recent survey in this field was made in Spring 1958 by the National Opinion Research Center of the University of Chicago, which found that 43 per cent of senior citizens had health insurance. The rate of growth from 1952 to 1958 averaged out to a little less than three per cent a year, said the Association.

The introduction of new insuring techniques has marked the increased activity in the 65-and-over field by insuring organizations, said the Association. One technique has been the mass enrollment approach of issuing health insurance to large groups of aged persons in a state.

One company insured more than 250,000 persons by this approach alone in a 12-month period ending in June 1959.

Numerous other methods of insuring aged persons are employed, said the Association. Many of the estimated 51 million persons now

covered by group insurance policies issued by insurance companies will be able to continue their insurance after retirement, generally with part or all of the premium paid by the employer. Other workers will be able to convert their group insurance to individual policies.

HUNTERS, BEWARE!

Hunting seasons will soon open all across the nation, and by the time they close it may be difficult to tell the hunters from the hunted.

Some twelve million persons purchase hunting licenses each year, and each year about two thousand men die from accidents involving firearms. Non-fatal gun wounds are more common; and there is a special insurance designed for the occasion that insures against gunshot wounds, falls, bites, burns, travel to and from hunting areas, or even death, says the Health Insurance Institute.

For a week-end hunting jaunt, a typical policy would provide \$1,000 toward medical bills resulting from an accident and a \$10,000 death benefit for a \$2 premium; and for a 31-day period it would cost \$10.15. A policy paying up to \$5,000 for medical bills and a \$50,000 death benefit would cost \$10 for three-day coverage and about \$50 for 31 days.

FOOTBALL HELMETS

Since the introduction of the hard rigid plastic football helmet with protruding face guard and "knife-like" rear rim, neck injuries have increased in number according to a report by two physicians and two athletic officials at University of Michigan.

They urged the use of more resilient materials in the structure of the helmet, the removal of or changes in the plastic face guard, and improvement in the chin strap.

The face guard should be shortened and placed closer to the face; a chin strap should be developed that would release at certain safely determined pressures, and some resilient material should be used in the back of the helmet, they said.

CURRENT STATUS OF RELATIVE VALUE STUDY IN ALABAMA

As a result of recommendations from the AMA and stimulation from several medical (not insurance nor federal) organizations, your State Association's AMA Program Evaluation Committee, after deliberate studies, last year made the following recommendations:

1. That a special committee be appointed for the purpose of making a continuing study of the relative value schedule.

2. That a relative value schedule be evolved for the State of Alabama, provided that the principle of partial pay, or indemnity, be understood as the essential part of the relative value schedule in any negotiations for which it is used and further provided that the principle of total fee for service, or service plan, shall not be a part of this schedule.

I believe I'm safe in saying that these recommendations came unanimously, from a committee some of whose members were admittedly opposed to such a study until they informed themselves fully and saw "The Big Picture," as it reflected the welfare of all doctors, their patients, and the preservation of the private practice of good medical care.

The State Board of Censors, apparently feeling others might too be better informed and wishing near-unanimous approval rather than a majority, concurred "in the first recommendation as to the appointment of a special committee to continue the study of a rel-

ative value schedule but, pending a report from this committee, recommends that no relative value schedule be evolved."

I was appointed chairman of this committee, which has met to initiate a discharge of its obligation. One undertaking has been a survey of the other state societies as to the current status of the relative value schedules; objections to; implementation of; and, when available, the finished product and experience therewith. It is felt our chief purpose is to stimulate individual education in and final appraisal of the subject. Though it is not our responsibility nor intent to sell this subject, we have found that it is generally true "to be informed is to buy."

Relative values have been defined as numerical unit designations which express the relationship that the value of one professional service bears to another. These values are in effect reflections of the time and effort expended to perform these services as well as the experience and competence of the physicians who provided these services.

The need for such a schedule may well have begun about 1915 with the creation of Workman's Compensation laws. Medicine stuck its head in the sand with the attitude that we are above discussing fee schedules. Since that time doctors have had to ask for every piecemeal improvement. This single facet really wasn't important as such; but

following Oscar Ewing in 1948, the federal medical health program budget had grown by 1959 to 2.8 billion dollars, making 38,000,000 people eligible to receive all or part of their medical care through Armed Forces, VA, Medicare, Vocational Rehabilitation, Crippled Children's Commission, and more recently O.A.S.I. By last year, 56 million were members of some Blue plan, and other health insurance carriers had enrolled 72 million. Last year 40,000 federal employees and their families in the State of Alabama were included in a program covering all federal employees. Next month, using the experiences in the first 16 months of this program, actuaries will evolve a schedule of benefits. In April, our State Association voted to render services to the O.A.A. hospitalization program without remuneration at present to implement the Kerr-Mills program "but it is felt . . . fees for services should be paid to physicians when the program enters a new fiscal year October 1 and that fees for hospitalized patients and for home and office care should be established." Thus within the next few weeks two different sets of fees, covering wide segments of the population of the State of Alabama, will be evolved either in a very hasty manner without true expression of careful deliberation by Alabama physicians or without any expression at all. We have learned from the Medicare experience that such schedules can't be evolved overnight.

At the AMA meeting in June, it was decided that national accounts serviced by Blue Cross would in the future be reimbursed on a nation-wide schedule derived from a composite from 70 odd Blue plans of varied antiquity. Also, in New York in June at the AMA meeting, "descriptive coding of medical services" was unanimously approved by the AMA House of Delegates. Actually this last undertaking is the first step in a relative value schedule and a large majority of the work involved. Thus it is obvious, and you know from daily experience, that rare is the patient who pays his health bill without direct reference to one of many varied schedules, established not by you or me but by "third" parties who place the interests of our

patients and our interests not first but "third."

Rigid fee schedules have and should be decried. Relative values in and of themselves are not fee schedules, nor are they benefit schedules *per se*. It is true, however, that relative value studies may be used by physicians as a basis for establishing fee schedules. Tradition, history, frequency, and development of professional technique all have a bearing on such relativity. It has been thus far demanded, and I hope we will continue to insist, that relative value schedules are to apply to **indemnity** payments and are to express an average fee and not a minimum or maximum.

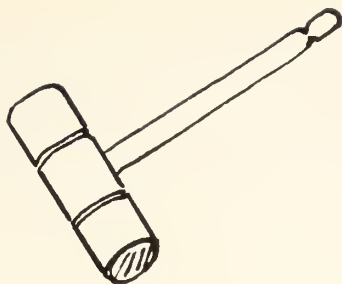
Relative value schedules serve as an excellent inventory to bring the true value of a procedure up-to-date and, by periodic reappraisal, to keep them up-to-date. Can you imagine a third party doing this without at least our stimulation or our assistance? Such serious study, fair appraisal, and application of relative value studies serve as a progressive step in meeting many of the criticisms and problems that prepayment insurance is encountering. Certainly our prime motive is our patient's welfare and not the success of prepayment insurance. On the other hand, if private insurance fails, socialization will be complete and final.

You are encouraged to inform yourself. Some 20 odd states have adopted a plan; many others are in a third and fourth year of planning (a good and a reasonable plan is not devised quickly and without much work).

Let us not be blinded by truisms such as "Let's not try to keep up with the Joneses (California)," "Let the insurance actuaries work it out; it's their problem," or "Beware of fixed fee schedules."

I believe you will conclude that here is a mechanism whereby our patient's interest, our interest, quality medical care, and many times the interest of well-meaning third parties can better be served.

H. H. Hutchinson, M. D.



President's Page



In the past two decades much advance has been made in the provision of hospital facilities for the care of the sick in our communities. Some of these hospitals have been privately owned; perhaps a great many more have been provided by combining the resources in the locality. A great stimulus to the last effort has been given by the Hill-Burton Act. In Alabama a great percentage of the population can be cared for by these facilities. Under conditions of modern medicine, in order to offer proper service, physicians must have hospital facilities available. On the other hand, hospitals cannot operate without its medical staff. Because of this mutual need when a physician is offered and accepts appointment to the staff, it should be understood that really there is no favor conferred by the physician or by the governing body of the hospital. Each of these groups is uniting for a common purpose—namely, alleviation of suffering and restoration of health, without regard to the financial status of the patient. In the case of the indigent, however, a problem presents itself to the community.

Because of the above facts, the proper relationship of the medical staff to the governing body of the hospital is a continuing necessity. If the basic purpose of the hospital is kept in mind—namely, providing care for the people—there should be little problem. There is a practical need in every community for this to be thoroughly understood and accept-

ed. Political, financial, or economic influences should not be allowed to interfere with this fundamental purpose. There are definite duties devolving on the governing body. There are also definite duties devolving on the medical staff. If these are clearly understood and outlined, there will be a minimum of conflict arising.

As the doctors of our state show increasing concern for the proper medical care of all our people, one practical endeavor, "fer to make the fire burn," will be honest, thoughtful, objective study of the basic purposes of our hospitals. Through the knowledge derived from this study, it is to be hoped that lay people, elected authorities, hospital boards, and medical staffs will more and more subordinate any sort of selfishness to the great purposes of all medical effort—bringing continued health protection, in its real sense, to all the people who need it.

John W. Simpson, M. D.



ORGANIZATION SECTION

Statement of the Medical Association of the State of Alabama in opposition to H. R. 4222

Mr. Chairman and Members of the
Ways and Means Committee:

I am Dr. M. Vaun Adams of Mobile, Alabama, where I have practiced my chosen profession of medicine for thirty years. I am speaking today as a representative of the Medical Association of the State of Alabama and as President-Elect of that organization. I have served in several key positions in the Association, including chairman of the Committee on Legislation for the past four years.

Our Medical Association is a scientific, educational organization composed of legally licensed practitioners of medicine. The Association was organized in my hometown (Mobile, Alabama) on December 1, 1847, and has grown to its present size of 2,138 members as of June 1. This membership includes 90

per cent of the practicing physicians in the state.

We in Alabama are unique. Since 1873 the state law has designated the Medical Association of the State of Alabama as the State Board of Public Health. In this capacity the Association, acting through its State Board of Censors when sitting as a State Committee on Public Health, has throughout the years led the fight for improved health for the people of our state, as well as for improved facilities and services offered by the state and county health departments. It has proven to be a smoothly functioning system which has brought constant public health improvements. Our concern for the health of the people of Alabama has been directed to individuals of all ages and not to a limited age group.

Indigent Medical Care

An indigent medical care bill was enacted by the Legislature of Alabama in 1958. The passage of this bill was strongly supported by the Medical Association of the State of Alabama and the Alabama Hospital Association. This program, administered by the State Department of Health, allocates funds to each county on a matching basis. These funds are available to residents of Alabama who are seriously ill and need hospitalization but are unable to pay for the services. The determination of ability to pay is rendered on the local level, by non-medical personnel. The physicians of Alabama, at the annual meeting of the Medical Association of the State of Alabama, agreed to render services to the medically indigent without charge.

While there is no age limit in this program, about 25 per cent of the recipients were above 65 years of age (1958-59). Sixty of the 67 counties in Alabama participated in this program during 1960.

The Medical Association has engaged in many other activities of a related nature, such as sponsoring or supporting legislation for additional funds for a mental health program, funds for medical education as well as for all phases of public health improvements.

The Legislature of Alabama is presently in session. The Administration has introduced into the Legislature a bill which would authorize a medical aid to the aged program (MAA). This bill has the complete support of the Medical Association. Since this bill has already passed the House and it is assumed that it will pass the Senate shortly, we have every reason to believe that the bill will become law this summer.

Alabama statutes were such that the O.A.A. program under the Kerr-Mills Law could be instituted at once. Thus, on April 1, 1961, a program calling for one and one-half million dollars was started under O.A.A. Hospitalization was necessarily on a limited basis (ten days) but was instituted for those people who were drawing old age pensions. In its present form, this program will operate for a period

of six months, when a new fiscal year will begin. It is anticipated that this program will be considerably enlarged on October 1, 1961.

The present session of the Legislature will also allocate available funds to the Department of Pensions and Security. The Commissioner of this Department indicates that he has requested funds which, when matched under Kerr-Mills, will increase the present program under O.A.A. to about five or 5.5 million dollars. Under the same general setup the Commissioner anticipates that a M.A.A. program will be started shortly and that the funds, when matched, will amount to about one and one-half million dollars (M.A.A.).

The Medical Association actively supported passage of the Kerr-Mills Law, and at its last annual meeting the following resolution was unanimously adopted:

Whereas, The Medical Association of the State of Alabama steadfastly reaffirms its support of:

1. The voluntary health insurance mechanism.
2. The free enterprise system which has made this nation the greatest in the world.
3. The right of the patient to choose his hospital and his physician.
4. Continuation of the present doctor-patient relationship, and

Whereas, The Anderson-King Bill, which has been introduced in the House and the Senate, would create a compulsory, government health care system (for those over 65) supported by compulsory taxes under the social security mechanism, and

Whereas, This Anderson-King Bill is socialized medicine for the aged, and

Whereas, Physicians know that political medicine will be bad medicine—bad for the patient, bad for the physician, and bad for the nation, and

Whereas, It is the desire of the physicians in Alabama to improve the quality and dis-

tribution of medical care for all persons, and

Whereas, The Congress of the United States passed the Kerr-Mills Bill (Public Law 86-773) which provides federal grants-in-aid to the individual states and authorizes federal participation under Old Age Assistance (OAA) state plans, and

Whereas, On April 1, 1961, the State Department of Pensions and Security and the State Department of Public Health inaugurated a program to provide hospitalization for old age pensioners, and

Whereas, The Medical Assistance for the Aged (MAA) is the most important part of the Kerr-Mills Law, and

Whereas, Enabling legislation in Alabama must be passed by the Legislature, and

Whereas, Adequate appropriations must be voted by the Alabama Legislature to insure a comprehensive program of health care for the aged (MAA), therefore be it

Resolved, That the Medical Association of the State of Alabama, meeting in annual session in the city of Tuscaloosa, Alabama, this the 29th day of April, 1961, supports the provisions in the Kerr-Mills Law which is designed to provide complete health and medical care for the aged *who need help*, and be it further

Resolved, That the Kerr-Mills Law, with its voluntary provisions at the state level, be given an opportunity to prove that it is the best method to provide medical care for those who need medical care and hospitalization, and be it further

Resolved, That the Medical Association of the State of Alabama strongly urges our Representatives and Senators in the Alabama Legislature actively to support enabling legislation (Kerr-Mills) and to provide adequate appropriations to initiate a substantial program of Medical Assistance for the Aged under Kerr-Mills legislation, and be it further

Resolved, That a copy of this resolution be sent to the President of the United States; the Vice-President of the United States; the Speaker of the House of Representatives; the

members of the House Ways and Means Committee; the Secretary of Health, Education, and Welfare; the Governor of the State of Alabama; the Honorable Members of Congress from Alabama; the Representatives and Senators of the State Legislature; the Commissioner of the Department of Pensions and Security; members of the Board of Trustees of the American Medical Association; and all state medical societies. (Adopted by the Medical Association of the State of Alabama in annual session on April 29, 1961.)

The Committee on Aging, appointed by the Medical Association, has been working with many of the interrelated aspects of the many problems faced by our senior citizens. The committee was instrumental in the formation of the Alabama Joint Council To Improve The Health Care of The Aged. The Medical Association took the lead in the formation of this Council, which now includes representatives from:

1. Alabama Dental Association.
2. Alabama Nursing Home Association.
3. Alabama State Nurses' Association.
4. Alabama Hospital Association.
5. Alabama Pharmaceutical Association.
6. Medical Association of the State of Alabama.

The combined objectives of the Alabama Joint Council are:

- A. To determine what each constituent association is doing in regard to the problem of the aged.
- B. To co-ordinate the programs of each association to prevent overlapping.
- C. To stimulate a more realistic and practical attitude toward the problem of aging in each component organization.
- D. To stimulate a more realistic attitude on the part of the public, by means of proper news releases and by offering speakers to various organizations.
- E. To help persuade industry and business that retirement should not come at a certain definite age but that individuals should be allowed to work as long as they are useful and productive.

The members of the Council played a leading role in the work of the Subcommittee on Health of the Governor's Advisory Committee on Aging, which was preparing for the 1961 White House Conference on Aging.

Summary Of The Subcommittee On Health Of The Governor's Advisory Committee On Aging

In Alabama there are—

250,000 people 65 years of age and over.

Of this group—

40 per cent receive *old age assistance*.

30 per cent receive *social security*

10 per cent receive *veteran's pensions*.

The Aged Group (1959)—

Each person averaged six visits to a physician.

15 per cent were hospitalized (almost all for less than one month).

Hospital bill (average)—less than \$300.

75 per cent required some medical treatment (medical cost less than \$100 per person per year).

Individuals spent less than \$100 per year for drugs (included prescription and self-medication).

5 per cent purchased eye glasses.

Under 2 per cent purchased hearing aids.

Under 2 per cent purchased dental plates.

30 per cent of the old age group carried hospital insurance (majority Blue Cross).

2 per cent were confined to nursing homes.

50 per cent of the total group believed that they could take care of their own medical needs.

Alabama is predominately a rural state. Here we have a very strong doctor-patient relationship. Throughout our history physicians have taken into consideration the financial status of the patient. Fees are reduced appropriately for those in the low income brackets. When a reduction of a fee is indicated, no matter what the age of the patient, physicians have acted in a humanitar-

ian manner and reduced the fees accordingly or have made no charges at all.

Surely you realize that there are many reasons why people do not want or desire medical care. Nevertheless, individuals in Alabama are not denied medical care because of inability to pay.

Everyone appears to assume that the cost of medical care under governmental supervision and regulation will be infinitely more expensive. The experience of Great Britain is positive proof of almost doubling costs in ten years, even when people are paying for drugs, glasses, teeth, etc., which was not done at the onset.

We, the physicians in the Medical Association of the State of Alabama, are opposed to the socialistic trend of our government to a complete welfare state. We steadfastly desire to help those who need help; we oppose those who are unwilling to help themselves. We are not in sympathy with government "handouts" in any form.

Everyone who has followed the "socialistic line" knows well that the principal objective of the welfare-minded group supporting health care under the social security mechanism is to *establish the principle of health care under the social security tax program*—as Aime Forand said, "If we can get our foot in the door . . ."

As has been brought out many times in various testimonies, the King type of bill will:

1. Lower the quality of medical care.
2. Be prohibitively expensive.
3. Promote waste and overutilization of hospitals, physicians, nurses, and all ancillary personnel.

The passage of federal legislation such as the King Bill will deal a deadly blow to States Rights, which has been suffering under the canopy of federalism.

The Medical Association of the State of Alabama preferred to testify before the Committee in opposition to the King Bill; but because sufficient time was not available, we would like to request that this report be included in the record.



ASSOCIATION FORUM

Encroaching Control

By RONALD REAGAN

It must seem presumptuous to some of you for a member of my profession to attempt to talk on problems of the Nation. It would be strange if it were otherwise. We in Hollywood are not unaware of the concept many of our fellow citizens have of us and of our industry. We realize that our merchandise is made up of tinsel, colored lights, and a large measure of make-believe. It is also true that our business methods and practices have reflected this footlight glamour more than the very real side of our very real business.

However, a few years ago "a very funny thing happened to us on the way to the theater." Ugly reality came to our town on direct orders of the Kremlin. Hard-core party organizers infiltrated our business. They created cells, organized Communist fronts, and for a time, deceived numbers of our people, who with the best of intentions, joined these fronts while still ignorant of their true purpose. The aim was to gain economic control of our industry and then subvert our screens to the dissemination of Communist propaganda.

Whatever the shortcomings, Hollywood had achieved a great deal. In the finest tra-

ditions of free enterprise, 70 percent of the playing time of all the screens of the world had been captured by the output of the American film capital. You may disagree sometimes with our boy-meets-girl plot, but all over the world our pictures were a window through which less fortunate humans had a glimpse of freedom and of our material comforts as well. The men in the Kremlin wanted this propaganda medium for their own destructive purposes.

Confident of their power the Reds in our midst made one mistake in judgment. They mistook their ability to deceive for success in conversion. Under the guise of a jurisdictional strike, they made an open effort to destroy the guilds and unions who remained free from their control. Ultimately, they hoped for one vertical union of motion picture people under the umbrella of Harry Bridges' maritime union. After the first shock, the people of the movie colony rallied quickly—we lived through scenes that heretofore had been only make-believe. Thousands of massed pickets overturned cars, homes were bombed, and threats of acid in the face were directed at performers. Months later their

power was broken. The studios had remained open, thanks to the refusal of management and the majority of our people to be intimidated.

We now know, of course, that we only won an isolated battle. In the spirit of Camp David, the Communist Party has ordered once again the infiltration of the picture business as well as the theater and television. They are crawling out from under the rocks; and memories being as short as they are, there are plenty of well meaning but misguided people willing to give them a hand.

We don't mean to present ourselves as "being able to run the circus now that we've seen the monkey," but it is possible we have an awareness not shared by many of our fellow citizens.

Most people agree that the ideological struggle with Russia is the No. 1 problem in the world. Millions of words are used almost daily to record the fluctuating temperature of the cold war. And yet, many men in high places in government and many who mold opinion in the press and on the airwaves, subscribe to a theory that we are at peace, and we must make no overt move which might endanger that peace. "Men cry peace, but there is no peace." The inescapable truth is that we are at war, and we are losing that war simply because we don't, or won't, realize that we are in it.

True, it is a strange war fought with unusual weapons, but we cannot yell foul, because it is a declared war. Karl Marx established the cardinal principle that communism and capitalism cannot coexist in the world together. Our way of life, our system, must be totally destroyed; then the world Communist state will be erected on the ruins. In interpreting Marx, Lenin said, "It is inconceivable that the Soviet Republic should continue to exist for a long period side by side with imperialistic states. Ultimately, one or the other must conquer."

Last November, the Communist parties of 81 countries held a convention in Moscow; and on December 6, reaffirmed this principle of war to the death. In a 20,000-word mani-

fest, they called on Communists in countries where there were non-Communist governments to be traitors and work for the destruction of their own governments by subversion and treason.

Only in that phase of the war which causes our greatest fear are we ahead—the use of armed force. Thanks to the dedicated patriotism and realistic thinking of our men in uniform we would win a shooting war. But, this isn't a decisive factor in the Communist campaign. They never really intended to conquer us by force unless we yielded to a massive peace campaign and disarmed. Then, the Russians would resort to armed conflict if it could shortcut their timetable with no great risk to themselves.

In 1923, Lenin said that they would take Eastern Europe, next organize the hordes of Asia, then surround the United States, and, he predicted, "... that last bastion of capitalism will not have to be taken. It will fall into our outstretched hands like overripe fruit."

Eastern Europe has been taken, and they are organizing the hordes of Asia around the red colossus of China. Even now, it would appear we are preparing to drink the bitter cup of capitulation in Laos only partly diluted by face-saving devices. Cuba is a Soviet beachhead 90 miles offshore, and more than 250,000 Communist organizers are spread up and down Latin America.

Meanwhile, other Communist tactics are also working on schedule. Bulganin said, "The American workingman is too well fed; we cannot appeal to him, but when through inflation America has priced herself out of the world market and unemployment follows—then we will settle our debt with the United States."

American apathy is due at least in part to our belief that the small number of American Communists is evidence of weakness and a lack of threat. But, history makes no secret of the fact that Lenin became the leader of the world conspiracy on just that issue—that the Communist Party would remain a small, dedicated, highly trained cadre which would use and manipulate the masses when neces-

sary. Lenin termed us the willing idiots. In our lifetime, this dedicated handful has enslaved one-third of the world's people on one-fourth of the earth's land surface.

The Communists are supremely confident of victory. They believe that you and I, under the constant pressure of the cold war, will give up, one by one, our democratic customs and traditions. We'll adopt emergency temporary totalitarian measures, until one day we'll awaken to find we have grown so much like the enemy that we no longer have any cause for conflict.

Three months before his last visit to this country, Nikita Khrushchev said, "We can't expect the American people to jump from capitalism to communism, but we can assist their elected leaders in giving them small doses of socialism, until they awaken one day to find they have communism." This is not a new thought. In 1788, James Madison told the Virginia convention, "Since the general civilization of mankind, I believe there are more instances of the abridgement of the freedom of the people by gradual and silent encroachment of those in power than by violent and sudden usurpations."

Others much more recently have counted on this with no realization they would one day be furthering the Soviet cause. A Socialist clergyman, writing in the *New Leader*, the Socialist magazine of 1927, called for a new strategy. He said Socialists should place themselves in Government jobs and work for Government ownership of power, control of railroads, banking, and key industries. He called his program—"Encroaching Control."

Not too long ago, Norman Thomas, six times a candidate for President on the Socialist Party ticket, commented that "the American people would never knowingly vote for socialism but that under the name of liberalism, they would adopt every fragment of the Socialist program."

Appealing not to the worst, but to the best in our natures, they have used our sense of fair play—our willingness to compromise—and have perfected a technique of foot-in-the-door legislation. Get any part of a pro-

posed program accepted, then with the principle of governmental participation in that field established, work for expansion, always aiming at the ultimate goal—a Government that will someday be a big brother to us all.

Traditionally, one of the easiest first steps in imposing statism on a people has been Government-paid medicine. It is the easiest to present as a humanitarian project. No one wants to oppose care for the sick.

Today, we have the costliest governmental medical program in the world in our Veterans' Administration hospitals. All of us are agreed that a man wounded in the service of his country is entitled to the finest in medical and hospital care. However, today three out of four Veterans' Administration beds are filled with patients suffering diseases or injuries neither originated by, nor aggravated by military service. There are only 40,000 service-connected disabilities in the United States, yet every year the Federal budget contains millions of dollars for additional Veterans' Administration hospital building and expansion. Counting the 23 million of us who are veterans plus other governmental programs, one of four citizens is entitled to some form of Government-paid medical or hospital care.

It is now proposed that all people of social security age be given Government-paid medical and hospital care. Once again, emergency is invoked, and we are given a picture of millions of senior citizens desperately needing medical care and unable to finance it. In all the emotional presentation, the backers of this program seem strangely reluctant to face the facts. In the last 10 years, 127 million Americans have come under the protection of some form of medical and hospital insurance. This includes more than two-thirds of those of social security age and more than 70 percent of all citizens. If the present rate of increase continues, by 1970 some 90 percent of the population will be so insured. As nearly as can be determined, less than 10 percent of our senior citizens require aid in meeting their medical needs.

The last session of Congress adopted a measure known as the Kerr-Mills bill to provide money for State-administered aid to these people. However, without even waiting to see if this meets the problem, a revised version of the once-defeated Forand bill is advocated to force all people into a compulsory Government health insurance program, regardless of need. Why? Well, ex-Congressman Forand provides the answer. He says, "If we can only break through and get our foot in the door, then we can expand the program after that." Walter Reuther has said his group makes no secret of the fact that they want nationalized health service for all. New American, a Socialist magazine, writes, "The Forand bill will not be paid for on the insurance principle according to factors of estimated risk. It will be paid for through the tax mechanisms of social security . . . Once the bill is passed, this Nation will be provided with a mechanism for socialized medicine."

In 1935, social security started with a 3-percent contribution on \$3,000 of income. Now it is 6 percent of \$4,800 and if the proposed expansions plus the medical program are adopted, by 1969 it will be 11 percent of \$5,000. It is no secret that pressure is being exerted to remove even the \$5,000 ceiling and make social security payments be based on total gross income.

Social security was never intended to replace private savings, pensions, or insurance. It was to provide a basis for savings so that outright destitution would not follow unemployment by reason of death, disability, or old age. In that light, the actuarial experts in charge estimated in 1943 that by 1957 social security benefit payments would total \$1.2 billion per year, but, the temptation to politicians to vote people a raise particularly in election years was too great. In 1957, the total outgo was more than \$7 billion and in 1959 outgo began exceeding income. The recipients of social security benefits today will collect \$65 billion more than they paid in. You and I, who are paying into this program are unfunded to an amount between \$300 and \$600 billion.

The average citizen has been led to believe he and his employer are contributing to a fund and that some day he will call upon this, his own money, to carry him over his nonearning years. But this isn't what Social Security representatives said before the U. S. Supreme Court. They stated that social security was not an insurance program and was not based on any actuarial standards. They stated that social security dues are a tax for the general use of the Government, and the payment of that tax does not automatically entitle anyone to benefits. Benefit payments are a welfare program which can be curtailed or canceled anytime Congress should so decide.

And what of our sons—the young man joining the work force in the next few years? He will be taxed to try and catch up on that mounting deficit. If he could have his social security tax to invest in private insurance, it would provide for almost double the benefits provided by social security. This is not the only price we are paying in individual freedom.

The press recently told of a group whose religious belief forbade their participation in any Government welfare program. Their property was seized and their cattle sold at auction to enforce their payment of social security taxes.

In education, the foot in the door was the \$900 million National Defense Education Act of 1958. The excuse was, as usual, the cold war. Russia had put a sputnik into orbit; obviously, our educational system must be at fault. Now the largest spending lobby in Washington is promoting a \$2½ billion program to alleviate allegedly crowded schools, underpaid teachers and bankrupt school districts.

Again, the facts seem strangely at variance. Ninety-nine and one-half percent of the Nation's school districts have not even approached their bonded limit of indebtedness. A 35-percent increase in students over the last decade has been matched by a 134 percent increase in spending by the local communities. An increase of 10 million students has seen classrooms built for 15 million. Five

hundred colleges, as of this moment, can take an additional 200,000 students without adding so much as a desk or chair. We are told we must build 60,000 classrooms a year for the next 10 years, but they forget to tell us we've been building 68,000 a year for the last 5 years and that continuation of this rate will give us a surplus of classrooms by 1970.

Of course, we want teachers to be paid adequately; and we are doing something about it. Their average pay has risen in the last few years from \$3,100 to \$5,300 annually. The truth is, not one shred of evidence has been presented that Federal aid of any kind is required. Could we possibly believe that three-fourths of \$1 billion a year in Federal aid could solve any great emergency when we are spending nearly \$20 billion a year at the local level?

Federal aid is the foot in the door to Federal control. In spite of their denials, their own words betray them. The director of public education of the State of Washington tells of the 2-year struggle of his State to meet the rigid requirements of the National Director of Education under the present act. He says, "This is Federal control by indirection—all the more dangerous because it poses as a Federal handout."

A former president of the National Education Association states publicly, "We might have to bring temporary Federal control to bring about integration in the South."

A former chairman of the President's youth fitness program says, "We can no longer afford local management of the schools. We must have a national school system to compete on equal terms with Russia."

The Department of Health, Education, and Welfare has quadrupled its staff and admits it is working to create national standards of education and a national curriculum.

In short, Federal aid is the first step in a Federal school system with teachers and subjects removed from parental control on the theory that a bureau in Washington is better qualified to supervise the upbringing of our youth.

Twenty-seven years ago, our farmers were told that a Federal subsidy did not mean Federal control. Now we have seen a rancher, Evetts Haley, Jr., fined \$4,000 for raising wheat on his own land and feeding it to his own cattle. The Supreme Court upheld his conviction with a single sentence ruling—"Yes, an agency of the Federal Government has the right to tell an American citizen what he can grow on his own land for his own use."

This Nation has tried to curb the production of a surplus by making it so financially attractive to produce a surplus that we own enough wheat to bake 25 loaves of bread for every person alive. In the State of New Mexico, citizens learned they could rent State-owned land for 25 cents an acre and immediately apply for and receive \$9 an acre from the Federal Government for not planting the land.

All of the farm mess is concerned with the 20 percent of agriculture coming under Government regulation and subsidy. Eighty percent of our agricultural economy is out in the free market of supply and demand. It would seem that the answer to the farm mess would be to free the other 20 percent of governmental regimentation; but, what is being advocated? We are told that the only solution to the problem is to bring the other 80 percent into the Government program. To that end a plan is advanced that would result in the licensing of every farm in the United States with complete governmental regulation of production and price. Proponents of the measure admit it will require thousands of additional Government employees, more subsidy on a permanent basis, and reduction of supply to raise food prices 15 to 25 percent. As an example, it is estimated that meat would be reduced in quantity to about what we knew under rationing in World War II.

Thomas Jefferson said, "If we let Washington tell us when to sow and when to reap, the Nation shall soon want for bread."

Today, no one denies the American people would resist the nationalization of industry. But, in defiance of this attitude the Federal

Government owns and operates more than 19,000 businesses covering 47 lines of activity from rum distilling to the manufacture of surgical equipment. The estimated book value of 700 governmental corporations is \$260 billion. Operating tax-free, dividend-free, and rent-free in direct competition with its own citizens, the Government loses billions each year in these businesses.

The next time you are caught in traffic take satisfaction in the knowledge that one of these Government corporations built a six-lane highway in Spain. It runs 15 miles from Madrid to a gambling casino.

All of these things have led to the growth of a collection of internal powers and bureaucratic institutions against which the individual citizen is virtually helpless. We now have a permanent structure of Government beyond the reach of Congress and actually capable of dictating policy. This power, under whatever name you choose, is the very essence of totalitarianism.

I quote here a statement by Congressman James B. Utt on this subject:

"We are rapidly coming to a point where a complete change of elected officials, including Congress and the White House, can mean little change in policy. You are governed more and more by people for whom you have never voted, for whom you never will vote, whom you have never seen, and whom you cannot recall by your vote. They are entrenched in the boards, bureaus and commissions, even at the policy level. For example, you may think that the Secretary of Labor sets the policy of his Department, but I know that much of the policy of that Department is set by civil service employees who have been with the Department for 20 years and they have no intention, now or ever, of recommending to the Secretary of Labor any policy which does not fit their personal philosophy of government, and you cannot remove them or replace them by your ballot. This is a form of invisible government and can lead to the most oppressive type of tyranny."

A year ago, a subcommittee of Congress reported its findings in the field of Federal

employees. There are almost 2½ million. In 1942, there was 1 top-salaried executive for every 89 employees; today, there is 1 for every 17. The committee further reported it found little evidence that any bureau, agency, or commission created in answer to an emergency ever went out of existence after the emergency disappeared.

A case in point: Congress ordered the liquidation of the Spruce Products Corporation in 1920, but, 30 years later it was still in existence. This Corporation was founded in World War I to find spruce wood for airplane fuselages.

Some people attempt to justify government in business on the grounds of greater efficiency due to central control. An example of this efficiency can be found in the claims department of the Veterans' Administration insurance program. In that department, three Government employees take double the time to perform the task normally assigned to one employee in a private insurance company.

Hopeless as it may seem, we can do something about it. We must inform ourselves on the proposals pending in Congress. Look beyond the foot in the door to the ultimate aim. Weigh the price we must pay in individual liberty and whether these programs qualify as things the people can't do for themselves. Then write to your Congressmen and Senators. Also, don't forget to write now and then just to say "well done" to your Representative when he has acquitted himself well on the firing line.

A basic point to remember is that none of these extensions of socialism can be effected without money. The fodder upon which our Government has fed and grown beyond the consent of the governed is the fruit of the tax system whose only consistency is that a levy once imposed is seldom removed.

An excise tax on telephones imposed during the Korean war was to curb telephone use during the emergency and really wasn't intended for revenue. The war is over, but the tax lingers on—the Government has discovered it needs the revenue. This particular tax, plus some of the hundreds of hidden

and indirect taxes that burden us, accounts for one-third of your telephone bill. One hundred such taxes account for one-half the price of a loaf of bread, one-fourth the cost of an automobile, one-half your gas and oil.

Once we were told the income tax would never be greater than 2 percent and that only from the rich. In our lifetime, this law has grown from 31 to more than 440,000 words. We have received this progressive tax direct from Karl Marx who designed it as the prime essential of a Socialist state. In the surtax brackets, the steepest rate of increase occurs through the middle income range where are to be found the bulk of our small businessmen, professional people, and supervisory personnel—the people Marx said should be taxed out of existence. At \$16,000 to \$18,000 of income, a man reaches the 50-percent tax rate. From 50 percent on up to the confiscatory 91 percent rate, the Government can only justify these brackets on a punitive basis, for the gross revenue derived from all the tax of the 50 percent or above is less than three-fourths of \$1 billion.

There can be no moral justification of the progressive tax. Perhaps that is why the bureaucrats pretend it is proportionate taxation. Proportionate taxation we would gladly accept on the theory that those better able to pay should remove some of the burden from those least able to pay. The Bible explains this in its instruction on tithing. We are told we should give the Lord one-tenth and if the Lord prospers us 10 times as much, we should give 10 times as much. But under our progressive income tax, computing Caesar's share is a little different. If a \$5,000 a year man today is prospered 10 times, his income tax increases 53 times as much.

Does this help the little man? A man with a gross income of \$3,500, a wife and two children, will find when he has finished paying the hidden and indirect taxes, that the tax collector's share of his gross \$3,500 is \$1,059. Some suggest the answer to his problem is to tax the upper incomes even more—but what leeway is left? If the Government confiscated all personal income above \$6,000 a year,

the increased revenue wouldn't pay the interest on the national debt.

No nation in history has ever survived a tax burden of one-third of its national income. Today, 31 cents out of every dollar earned is tax and of that 31 cents, 23 cents goes to the Federal Government, leaving 8 cents to be shared by the State, county, and local community. No wonder we are told to ask for Federal aid. But wouldn't it make more sense to keep the money here in the first place instead of running it through that puzzle palace on the Potomac only to get it back minus a sizable carrying charge?

Lenin once said, "The way to destroy capitalism is to debauch the currency. Through a process of planned inflation, a government can quietly and unobservedly confiscate the wealth of its citizens."

Henry VII substituted copper for silver in his coins, and we have been no less deliberate in our inflationary policies. Our dollar has lost more than half its purchasing power in 20 years. Of course, we are told that incomes have kept pace, that we are earning twice as much so we are still holding our own. This reasoning overlooks the part played by the progressive tax which is based on the number of dollars earned—not their value. The man who earned \$5,000 a year in 1940 must earn \$14,000 today to break even and pay his increased surtax. The \$10,000-a-year man faces an increase of \$12,000 in his tax bill and must now earn \$31,000 just to maintain the same purchasing power.

Project these figures ahead just 15 years, keeping the same annual rate of inflation and the same tax rate, and could anyone even pretend that free enterprise will exist? By 1975, the \$5,000-a-year man will have to earn \$33,000 and the \$10,000-a-year man will have to earn \$84,000 just to maintain their 1940 standard of living.

Here is the main battleground. We must reduce the Government's supply of money and deny it the right to borrow.

Two years ago, I appeared before the House Ways and Means Committee as a representa-

tive of the motion picture industry to urge tax reform. This was an experience similar to going over Niagara Falls in a barrel—the hard way, upstream. In a month of hearings, representatives of practically every segment of our society appeared before the committee. All of them urged some kind of tax reform. It was obvious that the majority of the committee had little sympathy with our plea, so it was no surprise when, several months later, the committee decided to hold new hearings. This time no volunteers were allowed. A hand-picked group of predominantly campus economists appeared and talked of plugging loopholes to increase the Government's tax revenues. Most of the so-called loopholes are the legitimate deductions without which the whole tax structure would have long since proved unworkable. The suggestions included disallowance of property taxes and interest on loans for income tax purposes and even the elimination of 100-percent deductions of charitable contributions.

The biggest lobby in Washington pushing tax reform has a bill which will increase the Government's tax take about \$18 billion. It is no coincidence that they have, on the other hand, recommendations for \$18 billion worth of welfare legislation. This measure will actually be presented as tax reduction with some cut in surtax rates.

Those of the "liberal" persuasion say they "reject the notion that the least government is the best government." They claim our citizens are not intelligent enough to spend their money properly. They feel the Government should take the money through taxation and then buy the welfare programs for the masses which they are not smart enough to buy for themselves.

When the old-fashioned idea of living within our means and paying something on the national debt is suggested, these same liberals tell us that "only State and local debt is bad." Through some exotic bookkeeping methods, they seem to feel that the Federal debt is meaningless. It is—it is incomprehensible.

If I had a 4-inch stack of thousand dollar bills in my hand, I'd be a millionaire. If we had the national debt of \$293 billion before us in thousand dollar bills, the pile would be more than 18 miles high. Maurice Stans, former budget director, has said that this debt is only the part of the iceberg which shows above the surface. Legislation already enacted into law has obligated our Government to about \$750 billion. Add to this the local and State debts plus the private debts of our citizens, and we find that we are mortgaged in an amount more than the market value of every tangible asset and every foot of real estate in the United States.

When we point out the danger of more deficit spending, we are told, "we are sacrificing our security on the false altar of a balanced budget." This is not so. Our individual freedom and our free enterprise system are the very sources of our strength, and there can be little security any place in the free world if there isn't fiscal stability in the United States.

With no one using the term "socialism" to describe these encroaching controls, we find that today 1 out of every 7 of the Nation's work force is on the public payroll. In just 15 years a 50 percent increase in employees has been met with a 170 percent increase in the public payroll. One-fourth of our medicine is socialized. Senator Byrd estimates that 40 million Americans receive some form of direct cash payment from government. We have a tax machine that in direct contravention to the Constitution is not designed to solely raise revenue but is used, openly and admittedly, to control and direct the economy and to equalize the earnings of our people.

Do not forsake the other issues; but, as Justice Oliver Wendell Holmes said, "Strike for the jugular. Reduce taxes and spending. Keep government poor and remain free." Write to your Congressmen as individuals. Fifty letters from a group such as you and your friends mean more than a resolution or a petition. Demand immediate tax reform which will reduce the percentage of the national income taken by Government. There

is a bipartisan tax reform bill, the Herlong-Baker bill, now before the House Ways and Means Committee. A 5-year gradual reduction of rates makes it the best planned tax reform bill introduced in the last hundred years. For every billion saved in Government spending, we can have a 2½-percent reduction of income tax.

If your Congressman should say we must cut costs first and then reduce taxes—don't stand for it. Remind him that no government in history has ever voluntarily reduced itself in size. Governments don't tax to get the money they need. Governments will always find a need for the money they get.

There can only be one end to the war we are in. It won't go away if we simply try to outwait it. Wars end in victory or defeat. One of the foremost authorities on communism in the world today has said we have 10 years. Not 10 years to make up our minds,

but 10 years to win or lose—by 1970 the world will be all slave or all free.

In this land occurred the only true revolution in man's history. All other revolutions simply exchanged one set of rulers for another. Here for the first time the Founding Fathers—that little band of men so advanced beyond their time that the world has never seen their like since—evolved a government based on the idea that you and I have the God-given right and ability within ourselves to determine our own destiny. Freedom is never more than one generation away from extinction—we didn't pass it on to our children in the bloodstream. It must be fought for, protected, and handed on for them to do the same, or one day we will spend our sunset years telling our children and our children's children, what it once was like in the United States when men were free.



HISTORY OF MEDICINE

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The present status of an institution or a profession rests upon the past. America, where the dignity of man is held high and where truth is respected, is what it is today because of the dedication and sacrifices of great men. One cannot enjoy the many marvels in the fields of engineering, economics, and medicine without appreciation of the contributions of the past. It is the purpose of this paper to trace the progress of medicine through its major stages and development.

Medicine is a profession in the truest sense. It is regarded as a life work, and exalts service over personal gain. It insists upon high standards of character and ability. Medicine has evolved through the years a code of ethics governing work and behavior. This profession relies upon a highly developed body of scientific knowledge. To practice medicine

one must have extensive professional training and a knowledge of the historical background of medicine.

"Modern medical practice would seem like a miracle to a man who lived only one hundred years ago. Yet the spectacular development is based on many thousands of years of slow development. The great civilizations of the past have made many important contributions to medical practice."¹

"Primitive man believed that illness was caused by disaffection in the spirit world. The victim had committed an offense against a social code or violated a taboo. Spirits took revenge on offenders either personally or through some agent-sorcerer."²

The earliest attempt to combat illness seems to have developed in two directions—magic and empiric. The medicine man was responsible for curing ills that developed among the people. Through his savage and magical chants, the medicine man tried to uncover some cure for the patient. The people of the tribe trusted this magic lure

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that the medicine man confessed to be true. The primitive man frequently sacrificed, amputated, and incised wounds. The medicine man combined both magic and religion. Magic resided in his personal powers, and religion called on the supernatural forces. This period was truly one of ignorance and no advancement.³

As the period of civilization changed, medicine also showed a new outlook. During the next hundred years medicine began its torturous ascent from witchcraft to craft. In the Mesopotamian civilization ones feeling ill meant that someone in the immediate family had committed a crime or sin. Medicine was a sacred art taught at the temple. The most learned man in a city-state was the priest-physician. The task of the physician was to treat the sick with charms, drugs, and minor operations. However, the physician of this time was subject to penalty for any death or injury to his patient. During the Archaic period physicians felt the liver to be the source of life. Illnesses were treated with drugs, fumigations, and medicated baths with hot or cold water. The physician did advance his practice from the previous low and developed new treatments only to be under such a strict doctrine that a slip of the knife could cost his life as well as the patient's.

The era of Egyptian medicine was also slow and showed little advancement. The Egyptian physician was a man of culture and learning; his skill was admired broadly. He was somewhat studied in the art of medicine and was able to cope with simple cases. The heart was the seat of life and even though they believed demons and spirits caused disease, they believed their gods to be stronger than these spells, and thus were able to overcome them. Medicine was divided into two schools: the empiric, which was costly and reserved for the nobility, and the magico-ritual, reserved for the commoners. There was a slight rational approach to surgery during the period. These beliefs of the Egyptians contained the seed of scientific knowledge.⁴

"The Hebrew period was a time when disease was considered a punishment for sin, and

Jehovah was accepted as the giver of disease as well as the supreme healer."⁵

The ancient Greeks were the first to complete the separation of medicine from religion. Before this time Greek medical treatment was under religious control. Aesculapius, the god of healing, was responsible for the safeguarding of the people's health. In the fifth century, a drastic reform in this temple cult was introduced by Hippocrates, the greatest of all physicians. "The history of medicine from Hippocrates to the present time is the record of the extent of man's acceptance of this responsibility."⁶ Hippocrates lived in the period of the highest achievements of Greek intellect of all subjects. For a time the teachings of Hippocrates were beginning to be accepted, until the physicians began to divide into separate schools and branch out on their own ideas.

Three hundred years passed. Corinth was destroyed, and Greek medicine migrated to Rome. There in the person of Galen, the medicine of Hippocrates was partially received, but it was the last period of enlightenment of many centuries. Galen was the extreme opposite of Hippocrates, who had been a man of simple principles. Galen was a man whose successors were overlaid with dogma and his theories derived from mere speculation. However, Galen's practices became the use of many centuries to follow.⁷

After the death of Galen, medicine began to fall into the Middle Age Period, and to be thought of only as an affair of the lower people. During this time the thoughts and actions of the people changed and became a reality. During this time the church was again supreme and the thought of medicine was left to the will or belief.

From the eighth to the eleventh centuries the Arabs advanced in civilization and their attitudes concerning medicine. Within two centuries after the destruction of Alexandria by the Arabs, their medicine reached a high level. The teachings of Galen were followed with only slight mention of those of Hippocrates.

Medicine was returned to Europe by travelers in the thirteenth and fourteenth centuries. There was little advancement of ideas at this time.

The revival of the principles of Hippocrates began in the sixteenth century. This was during the Renaissance of European civilization. The keynote of this work was begun by Paracelsus, who studied to uncover the false beliefs about the body. His work on different subjects began at once to entreat man's thinking and keen observance of the body. Vesalius, the leader of the movement in the sixteenth century, made a successful dissection of the body and published facts of great accuracy.

By the seventeenth century the revival of the scientific spirit was so extended by a few able men that experiments were used to prove their findings. But even after Harvey's demonstration of the circulation of the blood, many people stood firm in their beliefs in the writings of Galen.

During the eighteenth century the understanding of the body was more complete with the aid of the microscope. The ideas of Semmelweis and Lister concerning antiseptics evolved. Medicine, however, had not evolved from observation, and there was no real knowledge of what disease is or of its cause.

Morgagni began, through the result of pathological state results in symptoms, to tell the difference between organization and make-up of certain diseases. This established principle is the basis of all clinical medicine. The development of the smallpox vaccination by Jenner was probably one of the greatest advances during this period. Thinking he had a cure for the disease, Jenner asked the physician, John Hunter, his opinion. Hunter replied: "Don't think; try; be patient; be accurate."⁸

The nineteenth century was a period of great work, discoveries, and the actual practice of these principles. During this time Laennec discovered auscultation; Bright described the disease of the kidney, nephritis; Pinel introduced treatment for the insane;

Scarpa described the hardening of the arteries; and Louis founded medical statistics, the final test of treatment. The greatest benefits that medical science has given to mankind have come within the lifetime of our grandfathers. Among them are these three: the development of anesthesia, childbirth facts, and good medical training. The work of Pasteur and Lister later in the century must be credited with some of our greatest successes.

The Salk vaccine and many other wonderful cures have been developed during our lifetime. We owe much to the men and women in the world today striving to help all mankind.

"All of nature is a potential field of research, as scientists work to make life safer and to give people more abundant health and well-being."⁹

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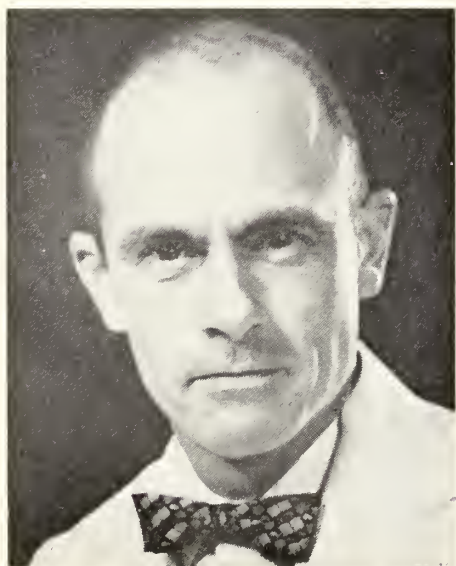
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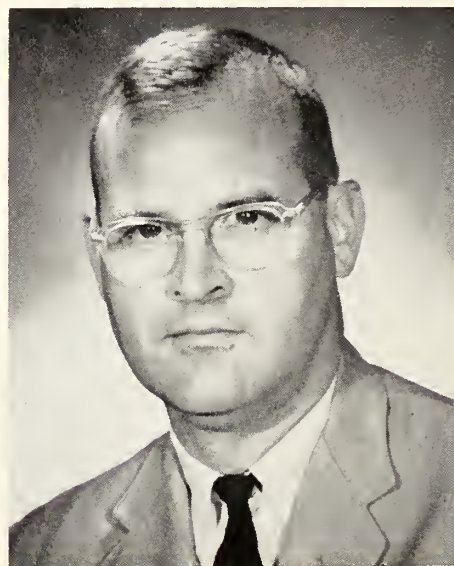
DR. SCHEIE

MEDICAL PROGRESS ASSEMBLY

The Birmingham Academy of Medicine will hold its fourth annual Medical Progress Assembly at the Tutwiler Hotel on September 17-19. Among the prominent physicians appearing on the program are Dr. H. G. Scheie, University of Pennsylvania; Dr. C. T. Dotter, University of Oregon; Dr. Vernon Knight, Bethesda, Maryland; Dr. F. J. Hofmeister, Marquette University; Dr. M. M. Grumbach, Columbia-Presbyterian Medical Center; Dr. Hugh Smith, University of Tennessee; Dr. E. F. Poutasse and Dr. George Crile of Cleveland, Ohio.



DR. DOTTER



DR. KNIGHT



DR. CRILE



DR. POUTASSE



DR. SMITH



DR. HOFMEISTER



DR. GRUMBACH



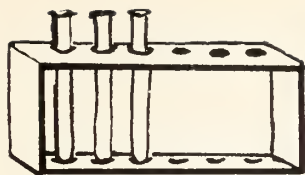
Dr. Oscar Creech (above), chairman of Tulane University's department of surgery, will be one of the main speakers at the Fall Medical Assembly at the Town House Motel in Mobile on Sept. 29-30. Other speakers include Drs. J. T. Pittman, R. V. Platou, Jack Eggshuler, and Buford Word.



Dr. Herbert G. Langford (above), associate professor of medicine and an assistant professor of physiology at the University of Mississippi, will be one of the three speakers at the Eli Lilly Road Show in Selma on Sept. 14. Drs. P. S. Derian and T. K. Williams are the other speakers.

Dr. James N. Etteldorf (right), professor of pediatrics at the University of Tennessee, will lecture at the third annual meeting of the Alabama Chapter of the American Academy of Pediatrics at the Grand Hotel on Sept. 15-17. Appearing on the program with Dr. Etteldorf will be Drs. A. P. Gold, James King, and Hugh Reynolds.





STATE DEPARTMENT OF HEALTH

THE STATUS OF SYPHILIS CONTROL

For ten years now, infectious syphilis has been among the easiest diseases both to diagnose and treat. Yet today, syphilis poses as great a menace to health in the United States as it ever did.

An all-time low for reported cases of new, infectious syphilis was hit in fiscal year 1957 when only 6,250 cases of primary and secondary syphilis were reported nation-wide. (The fiscal year for reporting of infectious diseases to the Public Health Service is July 1 to June 30.) In 1958, the total of infectious syphilis cases reported was 6,660. In 1959, it rose to more than 8,000, and in fiscal 1960 to 12,470. In Alabama, 1,384 cases of syphilis were reported in the calendar year 1957. In 1960, the total rose to 1,758. (Figures for Alabama include all cases of syphilis reported—late and late latent as well as primary and secondary.)

This trend apparently is continuing. It is probable that final tabulation of figures for the fiscal year ending June 30, 1961, will show that between 18,000 and 23,000 cases of infectious syphilis were reported in the nation. About half of these cases are occurring in the 15-24 age group. Increases are being reported from all parts of the country and are not confined to areas of intensified program activity. Increases are reported at all social levels.

The Public Health Service cites three general reasons for the increase:

1. A more mobile population. This is reflected in the fact that one out of every four infectious syphilis patients has had one or more out-of-state sexual contacts. It is not unusual for a single patient to have had sexual contacts in several states and several foreign countries. The highest percentage of positive blood tests for syphilis recently

has been found among domestic migrant workers, and 24 states reported recently that migrant workers pose special venereal disease control problems.

2. Rapid urbanization. Urban populations have tended to boom faster than constructive social, cultural, and health-related institutions, such as schools, churches, adequate housing, wholesome recreational facilities, physicians, and venereal disease control facilities. This is reflected in the fact, for example, that New York City, with 4.4 per cent of the nation's population, reports 16.8 per cent of the nation's infectious syphilis. Moreover, ten large cities with 11.4 per cent of the nation's population report 44.8 per cent of the nation's infectious syphilis.

3. Failure to halt the spread of infection because of inadequate epidemiology. An increasing number of private practitioners are becoming aware of the renewed threat of syphilis and are contributing greatly to its control. By maintaining a high index of suspicion for syphilis and by continuing to report cases to the health department they can contribute even more. To halt the spread of syphilis infection, it is necessary to interview each infectious patient confidentially and trace his sexual contacts, arrange for them to be treated if infected or given prophylaxis if uninfected. This process is almost unbelievably time-consuming, and it is costly. It is unreasonable to expect the private physician to donate his time and money to this work. Public health epidemiologists have been specially trained to carry out this function, and their services are available to private physicians throughout the country.

The Alabama Department of Public Health believes that the best hope for better control of syphilis lies in continued and increased cooperation between private physicians and public health epidemiologists.

DEPARTMENT OF HEALTH

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	June	July	E. E. July
Tuberculosis	117	147	189
Syphilis	118	135	145
Gonorrhea	296	313	323
Chancroid	6	4	2
Typhoid fever	1	3	4
Undulant fever	0	0	1
Amebic dysentery	3	3	1
Scarlet fever and strep. throat	39	29	23
Diphtheria	2	3	5
Whooping cough	9	3	35
Meningitis	3	4	6
Tularemia	0	0	0
Tetanus	0	2	4
Poliomyelitis	1	4	35
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	351	82	172
Chickenpox	31	23	26
Mumps	23	22	41
Infectious hepatitis	160	136	31
Typhus fever	1	0	0
Malaria	0	0	1
Cancer	703	764	510
Pellagra	2	1	0
Rheumatic fever	21	25	8
Rheumatic heart	20	20	16
Influenza	20	20	25
Pneumonia	111	160	114
Rabies—Human cases	0	0	0
Pos. animal heads	5	2	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

July 1961

Examinations for malaria	23
Examinations for diphtheria bacilli and Vincent's	41
Agglutination tests	497
Typhoid cultures (blood, feces and urine)	514
Brucella cultures	1
Examinations for intestinal parasites	2,535
Darkfield examinations	4
Serologic tests for syphilis (blood and spinal fluid)	22,302
Complement fixation tests	92
Examinations for gonococci	1,630
Examinations for tubercle bacilli	3,619
Examinations for Negri bodies (smears and animal inoculations)	234
Water examinations	2,942
Milk and dairy products examinations	4,060
Miscellaneous examinations	3,814
Total	42,303

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, MAY 1961

Live Births Deaths Causes of Death	Number Registered During May 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live births	6,076	4,003	2,073	21.6	21.6	22.0
Deaths	2,394	1,532	862	8.5	9.1	8.3
Fetal deaths	134	66	68	21.6	22.4	20.0
Infant deaths—						
under one month	118	65	53	19.4	23.9	23.7
under one year	182	84	98	30.0	35.8	32.0
Maternal deaths	2		2	3.2	11.4	3.1
Cause of Death						
Tuberculosis, 001-019	29	14	15	10.3	7.9	5.5
Syphilis, 020-029	6	3	3	2.1	1.4	4.0
Dysentery, 045-048						
Diphtheria, 055						
Whooping cough, 056	2		2	0.7	0.7	0.7
Meningococcal infections, 057					0.4	0.4
Poliomyelitis, 080, 081						
Measles, 085	2	1	1	0.7	1.1	0.7
Malignant neoplasms, 140-205	330	239	91	117.6	113.3	115.4
Diabetes mellitus, 260	36	20	16	12.8	15.5	8.0
Pellagra, 281	1		1	0.4		0.4
Vascular lesions of central nervous system, 330-334	319	181	138	113.6	123.4	116.1
Rheumatic fever, 400-402	2	1	1	0.7	1.8	
Diseases of the heart, 410-443	820	554	266	292.1	316.1	271.3
Hypertension with heart disease, 440-443	145	67	78	51.6	61.7	49.3
Diseases of the arteries, 450-456	51	40	11	18.2	17.7	19.7
Influenza, 480-483	9	4	5	3.2	4.0	2.2
Pneumonia, all forms, 490-493	69	38	31	24.6	26.3	19.4
Bronchitis, 500-502	4	1	3	1.4	3.6	2.2
Appendicitis, 550-553	3	1	2	1.1	1.1	1.1
Intestinal obstruction and hernia, 560, 561, 570	18	12	6	6.4	4.7	4.0
Gastro-enteritis and colitis, under 2, 571.0, 764	8	2	6	2.8	2.2	2.2
Cirrhosis of liver, 581	18	14	4	6.4	6.1	6.2
Diseases of pregnancy and childbirth, 640-689	2		2	3.2	11.4	8.1
Congenital malformations, 750-759	28	21	7	4.6	4.5	3.8
Immaturity at birth, 774-776	41	24	17	6.7	8.4	9.1
Accidents, total, 800-962	168	116	52	59.8	62.8	70.8
Motor vehicle accidents, 810-835, 960	66	44	22	23.5	35.7	35.8
All other defined causes	333	204	129	118.6	132.1	120.8
Ill-defined and unknown causes, 780-793, 795	95	42	53	33.8	40.8	27.7

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

October 1961

No. 4

Treatment Of Diabetes With Especial Reference To The Oral Hypoglycemic Agents

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Boston, Massachusetts

With an ever-increasing body of knowledge regarding diabetes and with a variety of therapeutic measures available, it is possible today to control satisfactorily the diabetic condition of almost all patients. However, even a casual survey in any part of the country will reveal that our attainments in the control of diabetes fall far short of our capabilities. This is a serious and important matter since it has become increasingly evident that poor control over the years sets the stage for the development of disabling, and

at times lethal, complications affecting the vascular and nervous systems. Contrariwise, consistently good control seems definitely to prevent, postpone or lessen the severity of such complications. It is worthwhile in this connection to define what is meant by good control. This may best be done by stating that "ideal" control implies that with a patient on a diet truly adequate in protein, calories, vitamins, minerals, etc., metabolic abnormalities are completely corrected and body processes restored to the physiologic

Dr. Marble is a graduate of Harvard Medical School and is an assistant clinical professor of medicine at his alma mater. He is a former president of the American Diabetes Association and a member of Joslin Clinic in Boston. Dr. Marble is also a member of the Association of American Physicians, American College of Physicians, American Society for Clinical Investigation, and The Endocrine Society.

Presented at a meeting of the Alabama Diabetes Association and the Department of Medicine of the Medical College of Alabama in Birmingham on March 19, 1961.

From the Joslin Clinic and New England Deaconess Hospital, Boston, Massachusetts.

Studies on oral hypoglycemic agents were supported by grants from the U. S. Public Health Service (Grant A-3762), Eli Lilly and Co., Charles Pfizer Co. and The Upjohn Company.

state. If the patient is on an adequate diet, a reliable and easily measured index of control is a blood glucose level which constantly oscillates within a normal range. Obviously, "ideal" control is not attained with any patient but the aim of both patient and physician should be to approach that ideal as nearly as possible without producing frequent or severe attacks of hypoglycemia with insulin. It should be borne in mind that the various terms used to designate control such as "excellent", "good" and "fair" are actually degrees of inadequate control.

Diet

The basis of all treatment of diabetes is a well planned and carefully followed diet. Unless this rule is observed, other measures are almost sure to fail. The essentials of a good diet are: (1) Restriction of carbohydrate at least to the extent that foods containing significant amounts of straight sugar are omitted and those containing large amounts of starch (bread, potatoes, rice, corn, beans, macaroni, etc.) are definitely limited. (2) Inclusion of amounts of protein adequate for the individual concerned. (3) Supplying of fat in such quantity as to favor proper body weight with avoidance of obesity. Calories derived from fat should not exceed 40 per cent of total calories. In many patients, especially those with persistently elevated blood cholesterol values, the use of polyunsaturated fats should be encouraged. (4) Provision for adequate amounts of minerals and vitamins. Thus, the growing child should have daily a quart of milk or its equivalent in other foods in terms of calcium content. The actual diet must be adjusted in its various features according to the age, sex, body weight, body build, amount of physical activity and complicating conditions of the person concerned. In general the dietary formula will range from 130 to 225 grams of carbohydrate, 60 to 120 grams of protein, 30 to 120 grams of fat and 1000 to 2500 calories daily. Patients should receive written instructions as to what to eat and not simply what to avoid.

The use of an unrestricted or "free" diet is to be deplored and does not deserve to be spoken of as treatment. In the first place, a free diet is almost certain to lack uniformity. Long experience has shown that the successful treatment of diabetes requires reasonable constancy from day to day in the factors which affect blood glucose and the underlying metabolism. Controllable factors include diet, insulin or oral hypoglycemic agents and physical activity. Second, the sugar in sweets, pastries, and other carbohydrate-rich foods requires little or no digestion and so is absorbed into the blood stream quickly after eating thereby overwhelming the capability of injected insulin to prevent hyperglycemia and glycosuria. In this connection it should be emphasized that in speaking of hyperglycemia and glycosuria, one has in mind chiefly not the abnormality of an elevated blood glucose *per se* but rather that of the underlying metabolic abnormality of which the blood glucose is an easily determined index.

At the outset of treatment, patients and their families should be taught the basic facts regarding food and nutrition and, more specifically, the approximate equivalents of one food for another in terms of carbohydrate, protein and fat. If the intelligence of the patient permits, it is invaluable to teach the detailed calculation of diets and the weighing of food on gram scales equipped with a taring device. Weighing should be used as a means to an end rather than as an end in itself. During a preliminary period of 4 or 6 weeks in which food is weighed, the patient's eye and hand become trained to estimate quantities of food surprisingly well. Routine weighing then may be dispensed with but return made at intervals for refreshing of knowledge and technique and for the serving of new or unusual foods. Instruction in weighing of food has seemed to many physicians to be unnecessary but experience has shown that this introduction to simple scientific principles and methods makes a deep impression on the patient and trains him for

more careful and accurate dietary control of his condition.

Insulin

The treatment of diabetes must be adjusted to the individual patient. Many middle-aged and elderly persons with "mild" diabetes can be treated successfully by restriction of diet alone and consequent reduction in body weight if this has been excessive. However, in addition to this, daily injections of insulin are imperative in almost 100 per cent of those with onset of diabetes in childhood and in most of those with onset under 40 years of age. Fortunately, there are available today several types of insulin from which may be chosen those which are best suited to the needs of the individual patient. These range from rapidly acting crystalline (or "regular") insulin with a duration of effect of only five to seven hours to protamine zinc and ultra-lente insulin with slow action and a duration of effect approaching 36 hours.

In the planning of insulin treatment, three items are important: type of insulin, dose of insulin and time of administration. In those patients, usually middle-aged or elderly, whose insulin requirement is low and whose diabetes is stable, a single dose of almost any type of depot insulin daily before breakfast will suffice. On the other hand, in those persons, usually children and young adults, whose diabetes is of unstable or "brittle" type, the finding of a satisfactory insulin program is often more difficult. Frequently the best program includes a dose of crystalline insulin plus a dose of isophane (NPH) or lente insulin in the morning before breakfast and a second dose of NPH or lente insulin in the evening, either before supper or at bedtime. In suitable patients, this giving of insulin twice daily in proper amount often improves the control of diabetes dramatically. Blood sugar variations become less, insulin reactions become fewer and patients are able to lead a more enjoyable, less turbulent life.

The physician must insist that patients test the urine, not only before breakfast but also

before the other two meals. Only in this way can the degree of control be assessed and adjustments in insulin dosage be made. In patients receiving NPH or lente insulin before breakfast, the test before the evening meal serves as the best index as to the effect of this type of insulin. In like fashion, the urine test just before the noon meal is the best index of the effect of the crystalline (or regular) insulin taken in the morning before breakfast. Increases or decreases in either or both types of insulin may be made in small increments, often only two to four units at a time, depending upon the outcome of the urine tests or the occurrence of insulin reactions. Finally, the urine test before breakfast (preferably not on the rising specimen but rather a second one obtained 20 or 30 minutes later but still before breakfast) serves as the best index of the effect of the NPH or lente insulin taken before supper or at bedtime.

Exercise

Although persons with diabetes may be treated successfully even though bed-ridden, the combination of physical exertion with insulin helps a great deal in the treatment of diabetes. Not only is there a salutary effect upon general health but also there is commonly a lowering of the insulin requirement and improvement in carbohydrate tolerance. To be sure, in the individual with unstable diabetes, exercise may precipitate hypoglycemic reactions but this tendency may be lessened or overcome by appropriate adjustments in insulin dosage, the routine use of between-meal snacks, and the giving of extra food preceding or during unusual exercise.

Education

Education of the patient and his family regarding diabetes is imperative if maximal success is to be obtained in treatment. This must start at the very first visit and be a continuing process. The patient and his family must be thoroughly schooled in such matters as the nature of diabetes, methods of

urine testing for sugar, diet and food equivalents, insulin, oral hypoglycemic agents and complications of diabetes and how to avoid them. The patient should be taught as much as his intelligence and cooperation will permit. Instruction may be given in classes which provide the advantages of group discussion and raise the morale of the patient by association with others who share an unusual life situation. Furthermore, classes enable the time of the instructor to be used to best advantage. Although dietitians, nurses and other ancillary workers must be relied upon to do a considerable amount of the teaching, the physician himself must take an active part in the program. Group instruction must be supplemented by the personal teaching of a given patient and his family regarding matters applicable to an individual situation. Instruction may profitably include aids such as manuals on diabetes, magazines and other literature for diabetics, charts, placards, demonstrations, films and film strips.

Oral Hypoglycemic Agents

Ever since the discovery of insulin in 1921 and its introduction into clinical use in 1922, there has been the hope that this potent hormone might be made available in a form which would be effective when taken by mouth. This hope has not been realized because of the digestion and consequent loss of potency which take place when insulin enters the stomach and upper bowel. Over the years there have been many reports of substances thought by their sponsors to be effective upon oral administration in the control of diabetes.¹ Most of these have been vegetable extracts of one type or another but in the mid 1920's a synthetic chemical agent, Synthalin[®], enjoyed some popularity for a few years.² Synthalin was abandoned because of reports of toxicity, affecting chiefly the liver³ and because of the demonstration of the unfailing efficacy of insulin.

A. Sulfonylurea Compounds

Carbutamide. In 1955 it was announced from Germany that a sulfonamide developed for possible use in urinary tract infections had been found to possess hypoglycemic properties in non-diabetic persons and in certain individuals with diabetes. This compound, carbutamide or BZ₅₅, was then subjected to extensive clinical trial throughout the world. After several months it was withdrawn from further use in the United States because of an incidence of toxicity considered to be too high to warrant the general distribution of the product. The untoward effects, noted in 5.4 per cent of 7193 patients for whom data were available, consisted chiefly of allergic skin responses, anorexia, nausea, vomiting, malaise, fever, leukopenia, agranulocytosis and jaundice. Eight deaths occurred under circumstances suggesting that the use of carbutamide may have contributed.⁴ Whether the experience in the United States was truly characteristic or merely fortuitous has been the subject of considerable discussion and debate. In many countries carbutamide is still used.

Tolbutamide (Orinase[®]). Not long after the introduction of carbutamide, a closely related compound, tolbutamide, was made available for clinical trial. Unlike carbutamide it has no antibacterial action. Although somewhat less hypoglycemic, it is less toxic. In almost 6 years of use the number of reported instances of important side effects is negligible.

Chlorpropamide (Diabinese[®]). In the body tolbutamide is readily metabolized so that its "half-life" is only four to seven hours. In contrast to this is the greater length of action of chlorpropamide, the other sulfonylurea compound available on the market in the United States. It is metabolized slowly, if at all, and appears to be largely excreted unchanged in the urine. Its average half-life is some 35 hours. Consequently, if the dosage is excessive, there is an accumulation of the drug in the body with the possibility of production of prolonged hypoglycemia. The use of chlorpropamide, particularly in higher dosage, is

attended by a greater incidence of untoward effects than is seen with tolbutamide. With large doses of 1.0 gram or more daily, as given earlier when clinical trials were in the exploratory stage, some patients experienced lethargy, muscular weakness, ataxia, dizziness, digestive disturbances, chest pain, skin rashes and leukopenia. Most disturbing have been evidences of effect on the liver with impaired function and jaundice thought to be a manifestation of drug hypersensitivity.⁵ When this complication occurs, it appears almost always within five or six weeks from the time of starting chlorpropamide, and is often heralded by fever and a skin rash. Eosinophilia and an increase in serum alkaline phosphatase are accompaniments. Prompt discontinuance of the drug is indicated. With the lower doses of chlorpropamide in common use in the past two years, the incidence of untoward effects has greatly diminished. It has been estimated that chlorpropamide has been given to about 100,000 persons; some 30 instances of jaundice have been reported, mostly in the first year after the introduction of the drug for clinical trial and during a time when, as stated above, relatively large doses of 1.0 gm. or more daily were often given.

In addition to carbutamide, tolbutamide and chlorpropamide, a very large number of sulfonylurea compounds have been synthesized and tested for possible usefulness as hypoglycemic agents. A certain few of these have shown enough promise to reach the stage of clinical trial. Among these may be mentioned metahexamide which was used for several months in 1958-59 on an investigational basis. It is a potent hypoglycemic agent with a duration of effect comparable to that of chlorpropamide but with such a high incidence of untoward effects, especially hepatotoxicity, that its use was abandoned after several months' trial. Other sulfonylureas which have been used investigationally include isopropylthiodiazole, cyclo-tolheptamide and acetohexamide.

Mode and Site of Action. Results of extensive investigation suggest that the sul-

fonylurea compounds act by stimulating the production and/or release of insulin from the pancreas. However, most studies have failed to disclose any of the peripheral metabolic effects ordinarily associated with the action of insulin. Thus, following the administration of a sulfonylurea compound, there is no increase in the respiratory quotient, no widening of the capillary-venous glucose difference following the giving of carbohydrate, no increase in blood pyruvate or lactate, no decrease in blood phosphate, etc. Furthermore, attempts to demonstrate an increase in the insulin-like activity of the peripheral blood have been unsuccessful. To explain this inconsistency it has been suggested that the amount of extra insulin released by sulfonylurea administration is so small as not to be detectable in the peripheral circulation as such or by its effects. A more satisfying explanation is that, since blood from the pancreas goes first to the liver by way of the portal vein, the sulfonylurea-induced insulin has its major effect in the liver with decrease in the output of glucose from that organ. The likelihood remains that insulin not fixed in the liver exerts a definite, albeit relatively small, effect in the periphery.

Selection of patients. The sulfonylurea compounds are effective in certain middle-aged or elderly patients with "mild" diabetes, i.e., those with an insulin requirement of 20 units or less daily. The age at onset of diabetes is of much more importance than the present age of the patient. In general, the oral agents are not effective in those persons whose diabetes began under the age of 40 years. The action of the sulfonylureas is relatively feeble and not strong enough to cope with situations of stress. Thus, they are not effective in ketoacidosis and usually not during infections, especially if there is fever, or during and following major surgical operations. At times of metabolic stress, therefore, the sulfonylurea compound may need to be discontinued and insulin used. Later, in many instances, the oral agent may be resumed with success.

The sulfonylureas are not effective in pa-

tients with onset of diabetes in childhood and adolescence or, indeed, in most persons with onset under 30, or even under 40, years of age. They are not effective in older patients with the unstable ("brittle") type of diabetes characteristically seen in children. Exceptions to this general rule may be found in certain young patients with diabetes of recent onset or in those with diabetes in remission or in those whose diabetes is demonstrable only by sugar tolerance test.

These considerations point to the conclusion that the sulfonylureas work only in those persons who possess to a greater or less degree the ability to secrete insulin. Apart from conditions of metabolic stress, their effectiveness is related directly to the capacity for endogenous insulin production.

Dosage. The amount of tolbutamide given daily ranges from 0.5 to 2.0 gm. given usually in two doses, before breakfast and before supper. Quantities larger than 2.0 gm. daily are tolerated without difficulty but rarely have any greater hypoglycemic effect. Apparently amounts of 2.0 gm. or less daily are large enough to secure maximal stimulation of the patient's insulin-releasing mechanism. In establishing the dosage in any given individual one uses the smallest amount possible consistent with obtaining excellent control of hyperglycemia and glycosuria.

As mentioned earlier, the amount of chlorpropamide given daily must be restricted in order not to permit undue accumulation of the drug in the body. Experience has shown that it is best not to exceed 500 mg. daily given usually in a single dose. Amounts as low as 50 or 100 mg. daily may be effective in certain patients.

Standards of control. It is imperative that the physician set up definite criteria of control and insist that patients consistently meet such standards. A satisfactory rule is to regard control as "good" if the majority of blood glucose values at three or more hours after food are 110 mg. per 100 ml. or lower. One may speak of "fair" control if the majority of blood glucose values at three or more hours

after food are 130 mg. per 100 ml. or lower. In patients with good or fair control, the amount of sugar in the 24 hour collection of urine is usually zero or at most 5 mg. or less. Other grades of control are regarded as "poor" and in such instances treatment with insulin is indicated.

Sulfonylurea failures. When patients are found to exhibit an unsatisfactory response initially, the result is regarded as a primary failure. When there is initial success which lasts for at least a month and then later the patient's response becomes unsatisfactory, the result is called a secondary failure. The secondary failure rate has been the subject of much discussion and controversy. There are those who report, that among sizable groups of patients treated for a few years with sulfonylureas, the failure rate is high enough to warrant speculation as to whether or not in the course of time almost all patients will develop unresponsiveness. DeLawter *et al.*⁶ in an analysis of results with 200 patients who had received tolbutamide for periods up to three years, found that the secondary failure rate was 29.5 per cent and the monthly failure rate averaged about three per cent of the patients treated each month. On the other hand, at the Joslin Clinic a study of results in 1965 patients given tolbutamide for periods up to five years, has shown that although the long-term secondary failure rate was 22 per cent, this was due in large part to poor initial selection of patients, failure of the patient to follow a restricted diet and inadequate dosage of tolbutamide. In the remaining patients (3.6 per cent of the total) one must assume a true drug failure, the cause of which is obscure.⁷ In certain patients some unexplained change in the basic character of the diabetic state may have taken place. There has been no evidence thus far to suggest that long-continued use of sulfonylurea agents damages the islet cells of the pancreas or impairs further the ability of the diabetic patient to utilize carbohydrate.

B. Biguanides

In addition to tolbutamide (Orinase®) and chlorpropamide (Diabinese®) a third oral hypoglycemic agent, phenformin (DBI®), has been admitted to the market and made available for general use. Phenformin or phenethylbiguanide is one of a family of compounds chemically unrelated to the sulfonylureas. Phenformin and its analogues are apparently non-toxic in human subjects in those doses which can be tolerated without digestive upsets.

Phenformin causes a lowering of the blood sugar in a variety of animals both normal and those made diabetic by means of alloxan. In most diabetic patients phenformin in dosage of 50 to 200 mg. daily by mouth causes some decrease in the blood sugar. Strange, and as yet unexplained, is the fact that in non-diabetic human subjects phenformin has no hypoglycemic effect even in daily dosage as great as 400 mg.

Mode of action. Although the exact mechanism of action of the biguanides remains in doubt, it appears certain that their hypoglycemic effect is not due to stimulation of output of insulin from the pancreas as seems to be the case with the sulfonylureas. Results of studies in vitro suggest that the biguanides may inhibit electron transport and enzymatic oxidation at certain stages in the Krebs cycle and favor anaerobic glycolysis. Although phenformin increases the uptake of glucose by the rat hemidiaphragm, glycogen decreases rather than increases and there is a marked increase in lactic acid and decrease in oxygen consumption. However, despite these results obtained in the laboratory, doubt has been expressed that the hypoglycemic action of phenformin in vivo arises from inhibition of oxidative processes in tissues.⁸ This opinion is based on the fact that certain biguanides which lower the blood sugar in the living animal have little or no effect on tissue oxidation in vitro, and vice versa.

Selection of patients. As with the sulfonylureas, phenformin will lower the blood sugar in a large percentage of selected mid-

dle-aged and elderly persons with "mild", maturity-onset diabetes, presumably those with considerable endogenous insulin production. It goes without saying that a diet restricted in carbohydrate must be carefully followed. Among older patients in whom treatment with oral hypoglycemic agents is under consideration, the choice must be made between sulfonylurea compounds and phenformin.

Since phenformin has a hypoglycemic effect also in certain patients with onset of diabetes in childhood or early adult life, its use in such persons requires discussion. Since patients with the growth-onset type of diabetes are almost invariably insulin-dependent and ketosis-prone, chief reliance in treatment must be on insulin. No thought should be given to the use of phenformin unless the patient consistently follows a well-planned diet and unless the insulin program is the best that can be devised for the individual patient as regards types, dosage, and times of administration. If, despite this, the instability ("brittleness") of the diabetes is such that satisfactory control cannot be achieved without the occurrence of frequent or severe insulin reactions, then one may try the effect of adding phenformin to the treatment schedule. It has been the clinical impression of various workers that in a considerable percentage of such patients, the giving of phenformin smoothes the course somewhat probably because of bringing about some lowering in the insulin requirement.⁹ However, this effect is difficult to document and some doubt has been cast on the validity of this conclusion.¹⁰

Aside from its use alone in older persons and as a supplement to insulin in younger patients, phenformin may at times be used with success in combination with a sulfonylurea compound in certain individuals with the maturity-onset type of diabetes in whom treatment with either agent alone produces promising but not wholly satisfying results.

Dosage. A common finding has been that when the daily dosage of phenformin exceeds

200 mg., unpleasant side effects occur. These consist of anorexia, nausea, abdominal distress, vomiting and diarrhea. The upper limit of tolerance varies from person to person and with some may be 150 mg. daily or even less and in others may extend to 300 mg. or even higher. Such untoward effects promptly disappear with lowering of the dose or discontinuance of the drug. In over three years of use, no single instance of lasting tissue or organ toxicity has been reported.

Using 25 mg. tablets, one may initiate treatment by giving one tablet before breakfast and before supper. If well tolerated and if a larger dosage is needed, then a third tablet may be given before the noon meal and then one added at bedtime. In this way the dose may be increased gradually until one is giving two tablets (50 mg.) before each meal and one or two tablets at bedtime (175-200 mg. daily in all). Usually in responsive patients this amount will suffice and will be about as much as can be given without digestive disturbances.

For some time "DBI T-D[®]" (phenformin time-disintegration) capsules, 50 mg. and 100 mg., have been available for clinical trial. These lengthen the duration of effect so that the drug usually needs to be given only twice daily.

Ketoacidosis. The occurrence of ketonuria in certain subjects receiving biguanides has long been recognized but in most articles reporting the use of phenformin in large groups of patients, it is given only scant mention. Apparently symptomatic ketoacidosis has not been a significant problem in the experience of most clinicians. An exception to this was the report by Walker and Hannah¹¹ who noted ketonuria in 34 or 29.1 per cent of 117 patients and an alkali reserve of less than 20 mEq./l. in 13 cases. Their experience emphasizes the fact that, particularly in patients with growth-onset and/or unstable diabetes, insulin must form the basis and mainstay of treatment. If phenformin is given, it should be used only as a supplement to an adequate amount of insulin.¹²

C. Place of Oral Hypoglycemic Agents in the Management of Diabetes

The oral hypoglycemic agents have been enthusiastically welcomed by patients who long for freedom from daily injections. Their introduction has stimulated research in diabetes and related fields in laboratories throughout the world. However, interest in these compounds should not lead to preoccupation with them or to lack of recognition of the established worth of insulin.

The basis of treatment of diabetes remains a restricted, though nutritionally adequate, diet. Regardless of other forms of treatment, unless the physician prescribes an appropriate diet in exact terms and unless the patient is willing to follow it, the results will be unsatisfactory. In many persons, especially those who are overweight, dietary restriction alone will suffice and should be insisted upon. In such patients the physician plays an uncomfortable and illogical role if he prescribes insulin or oral agents which may aid in maintaining or promoting obesity.

Many middle-aged and elderly patients, most young adults and all children and adolescents with diabetes require, and should have, insulin. Experience during the past 40 years amply testifies as to the health-promoting and life-saving effects of insulin. There remain certain diabetic patients with whom glycosuria and hyperglycemia can be controlled with oral hypoglycemic agents. The proportion of these responsive patients in relation to all diabetics is relatively small although the group is numerically large because of the frequency of diabetes in the general population. Restriction of oral compounds to this group is imperative because their unwise use in other individuals may lead on the one hand to the acute complication of ketoacidosis and on the other hand, to long-continued, inadequate control of diabetes, favoring late vascular and nervous system complications.

Unwise initial selection and prolonged maintenance of patients on oral hypoglycemic agents despite poor control, occur all too com-

monly today. In order that results of treatment may be evaluated properly, careful observation of patients over an indefinite period of time is essential. Return to insulin should be made if the results of oral therapy are not satisfactory. To this end, it is imperative that the urine be tested daily to make sure that it is consistently free from sugar and that the level of blood glucose be determined periodically. Such tests for blood glucose, made not only fasting but also during the course of the day, should yield values which approach normal (preferably 110 mg. per 100 ml. or lower at three or more hours after eating).

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Fat Metabolism And The Pathogenesis Of Vascular Disease In Diabetes Mellitus

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There is much to indicate a relation between abnormalities of lipid metabolism and the development of vascular disease in diabetes mellitus. Grounds for this have originated from observations of frequent occurrence of arterial disease in patients with hyperlipidemia, and from epidemiologic studies relating atherosclerosis to dietary fat. In the diabetic, the relation is especially pertinent because of the high incidence of vascular disease and the great diversity of lipid abnormalities. Yet, despite intensive investigation in this field, pathogenetic mechanisms remain unclear, and methods of prevention are uncertain.

In order to comprehend and apply data from blood lipid studies, some knowledge of plasma fat composition is necessary. Total plasma lipids are roughly 600 mg. per cent in the normal state, with total cholesterol, triglyceride (neutral fat), and phospholipid ac-

counting for approximately a third each. The functions in general of these three components are poorly understood, let alone their role in vascular disease. Cholesterol may serve as a precursor of bile acids and steroid hormones, while triglyceride is the storage form of fat in depots. Phospholipids are found within cellular stroma. Since lipids are water insoluble, they are transported attached to plasma proteins. By techniques of ultracentrifugation and of electrophoresis it has been possible to separate out various lipoprotein fractions. Those pertinent to this discussion are the chylomicrons and beta lipoproteins, since they transport most of the triglycerides and a large part of cholesterol. The former are made up almost entirely of triglyceride and contain very little protein. The latter are heavier and contain more protein, and transport both triglyceride and cholesterol. Unfortunately, different methods of analysis of the above lipids used in different laboratories have interfered with uniformity of values and make comparative studies difficult. Recently, studies of the plasma free or nonesterified fatty acid fraction have shown it to be of great importance physiologically. Fats may be mobilized in this form from depots for oxidation. Despite a small plasma concentration, only 14 mg. per

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Presented at a meeting of the Alabama Diabetes Association and the Department of Medicine of the Medical College of Alabama in Birmingham on March 19, 1961.

cent, the turnover is great, so that a large amount of fat may enter and leave the plasma compartment in this form per 24 hours.

A relation between plasma lipid concentrations and vascular disease has been well documented in studies of atherosclerosis in patients with hyperlipidemia and to some extent in determination of plasma lipids in patients with atherosclerosis. Investigation of families with elevated plasma cholesterol concentrations have shown incidences of coronary artery disease as high as 33 per cent.¹ Similarly, families with elevation of total plasma lipids are prone to develop coronary sclerosis.^{2, 3} Diseases accompanied by elevated plasma fats such as hypothyroidism and biliary cirrhosis also have associated atherosclerosis. In the reverse approach, numerous surveys of large numbers of patients with atherosclerosis have revealed small but statistically significant increases in cholesterol⁴ and the beta lipoproteins.⁵ The average increases, however, are by no means in the ranges seen in the familial hyperlipid states. Recently Albrink has reported a correlation between plasma triglyceride (neutral fat) concentration and the presence of coronary artery disease.⁶ In a group of men with recent myocardial infarction, 70 per cent had elevation of triglyceride concentration above the control level, in contrast to a rise of cholesterol in only 18 per cent. To date, this component of plasma lipid appears to correlate with coronary sclerosis more closely than any other fractions measured.

In regard to dietary fat, Keys and coworkers have presented evidence purporting to show that atherosclerosis becomes increasingly more common as fat consumption rises.⁷ About 45 per cent of the calories of the American diet are derived from fat. In studies of Japanese farmers, Keys found that when only 10 per cent of dietary calories was derived from fat, the plasma cholesterol was 145 mg. per cent, and the incidence of severe atherosclerosis at autopsy only ten per cent. Moving to other countries where increasing amounts of fat were eaten, Keys observed positive correlations of the plasma

cholesterol concentrations and fat ingested. In the United States, the greatest amount of fat is eaten, and the plasma cholesterol concentrations and incidence of severe atherosclerosis at autopsy are highest. In order to eliminate the factor of racial difference, he contrasted these three parameters⁸ in the Japanese living in Japan, Hawaii, and California. All three increased with movement eastward. It must be emphasized that the findings are relations only and are not proof of cause and effect. Also, it is true that the incidence of coronary artery disease has been correlated with other factors such as tobacco smoking, occupational stress, drinking water, etc.⁸ Nevertheless, the observations of Keys are impressive and strongly suggest a role of dietary fat in the pathogenesis of atherosclerosis.

That lipid abnormalities may occur in diabetes mellitus has been known for many years. One of the most complete early studies was that of Chaikoff and collaborators who reported little change from the normal in 23 juvenile diabetics under control.⁹ Harris et al, in 1953, described the general changes occurring in the three gross major fractions of plasma lipids during diabetic acidosis.¹⁰ They showed that hyperlipemia was in the main accounted for by a rise in triglyceride, less so by phospholipid, and least by cholesterol. In the supposedly controlled diabetic the plasma cholesterol has been reported as normal¹¹ or slightly elevated.¹² It is noteworthy, however, that in the controlled diabetics, the individual increments in plasma cholesterol are small if occurring at all and approach the differences reported between those with and without coronary heart disease in non-diabetic populations. Adlersberg and coworkers extended their studies to include patients with diabetic disease of the small vessels.¹¹ As the disorder progressed from retinopathy to nephropathy there were increases in triglyceride, phospholipid, and cholesterol in fashion similar to those described for acidosis above. In fact, the total lipids in the presence of diabetic glomerulosclerosis averaged in excess of 1000 mg. per cent. In these latter cases, how-

ever, the effect of renal insufficiency per se on plasma lipids must be considered.

Another phase of lipid study appeared with the introduction of measurements of the serum lipoproteins. In studies of groups of diabetics, there have been found elevations of the beta lipoprotein component containing triglyceride and cholesterol.^{13, 14, 15} Further rise yet was observed in uncontrolled diabetes,^{16, 17} particularly in the presence of glomerulosclerosis.¹⁷ Not all these observations have been confirmed, however, since the increased beta lipoprotein reported by Lowry et al was found in women only,¹³ and Hanig and Lauffer could find no change within diabetics between those who were cooperative, uncooperative, or had cardiovascular or renal disease.¹⁸

Alterations in lipid intermediary metabolism are apparent from studies of the plasma free fatty acid and blood ketone concentrations. When insufficient glucose is utilized, free fatty acids are mobilized from fat depots to provide substrate for energy. Free fatty acids also supply substrate for ketone formation in the liver. It has been shown in diabetes that even when the blood sugar is normal, the blood ketone concentration may be elevated.¹⁹ Accordingly, normoglycemia produced by insulin does not wholly correct this phase of lipid metabolism. Other evidence of deranged lipid intermediary metabolism emerges from the studies of Hennes and Redding.²⁰ Using tracer techniques, these workers observed decreased rates of cholesterol and triglyceride formation in the well-controlled diabetic. The significance of the findings is far from clear, but they emphasize further the continued presence of abnormal lipid metabolism even when control is judged adequate.

From the foregoing, it is evident that alterations in cholesterol, triglyceride, free fatty acid, and ketone metabolism may be present in diabetes, even when the patient meets currently popular criteria for control. It has been proposed that atheromatous lesions are caused by the direct invasion of vessel walls by molecules of cholesterol and

beta lipoprotein from the plasma. Though there are some grounds for these hypotheses, conclusive proof of such happening in man is not at hand. Moreover, the recent findings of Albrink that coronary heart disease is better correlated with plasma triglyceride focus new attention on this lipid, especially when it is the lipid most likely to be elevated in the uncontrolled diabetic. Still, it is just as plausible to speculate that any derangement of plasma lipid may be the result of another undefined defect causing vascular disease also. Future investigation in intermediary metabolism undoubtedly will throw light on mechanisms of pathogenesis now wholly unclear.

Of great importance are the observations of Kinsell that a change in the quality of fat eaten can affect the plasma cholesterol concentration.²¹ These studies, along with extension by others, have shown that an increase in the saturated fatty acid content of the diet can cause elevation of the serum cholesterol, while a shift to polyunsaturated fatty acids can lower the cholesterol. Mono-unsaturated acids appear to be without significant effect. Saturated fatty acids are mainly animal in origin and account for about 40 per cent of the fat eaten in this country. Examples are palmitic and stearic acids. Polyunsaturated acids are mainly vegetable in origin and account for only about ten per cent of fat eaten. Examples are linoleic and arachidonic acids and are found in high concentration in cottonseed (Wesson), corn (Mazola), and safflower oils. The remaining 50 per cent of dietary fat is composed of monounsaturated acids, of both animal and vegetable origin. Oleic acid is an example and occurs in vegetable oils such as peanut and the commonly used olive oil. In terms of 80 Gm. of fat prescribed in the popular 1800 calorie diabetic diet, only 8 Gm. or so are polyunsaturated. It has been shown that the serum cholesterol will decrease if total dietary fat is reduced to less than 20 Gm. daily. On the other hand, plasma cholesterol will also decrease with total fat unchanged in amount, providing a ratio of polyunsaturated to saturated fatty acids of

two or three to one is obtained. By this approach not only will abnormally elevated concentration of plasma cholesterol be lowered, but even levels of normal range decreased. This phenomenon has been demonstrated in the diabetic as well as in the normal.²²

Interest in diabetic diets low in fat was stimulated further by the report of Van Eck that retinopathic exudates had regressed when the daily fat ingested was 20 Gm. or less.²³ The diet protein content was kept constant, and carbohydrate provided the remaining calories. It was noted too that plasma cholesterol and triglyceride decreased. But other studies of the effects of isocaloric diets with very low fat content have revealed a rise in triglyceride in both non-diabetics²⁴ and diabetics.²⁵ If the elevations of triglyceride occurring in diabetics and non-diabetic patients with coronary artery disease reported by Albrink are significant in the development of vascular disease, a very low fat diet conceivably could be hazardous.

Nutritional studies in diabetic populations similar to those of Keys in the non-diabetics have not been made to my knowledge. Any investigation of the relation of diets to the development of diabetes in different countries, let alone the development of diabetic vascular disease, is immediately weakened by ignorance of the actual incidence of diabetes. Despite careful large surveys in this country, the true incidence remains dubious. Mortality statistics similarly are of questionable value. Nonetheless, attempts have been made to link diabetes with fat input in various parts of the world. Twenty-five years ago, Himsworth reported that the death rates of diabetics were higher in countries where the percentage of dietary fat was high.²⁶ He also noted a positive relation between mortality and dietary fat within the United Kingdom itself.²⁷ Other suggestive evidence is contained in accounts of the incidence of reportable diabetes in Germany and Japan during World War II.^{28, 29} In both countries, curves of decline in reported cases coincided with those of decreased dietary fat during the periods of food rationing. Though data of vas-

cular disease are not available, the inference is that dietary fat could play a role in the development of diabetes with eventual complications.

In spite of careful consideration of studies of dietary input and plasma lipid concentrations in relation to vascular disease, it is uncertain what dietary prescription will be most helpful in the prevention of diabetic vascular abnormalities. The spectrum of vascular disease in the diabetic is broad. The common disorders may be grouped under three headings to include atherosclerosis and medial calcification of the arteries, arteriosclerosis, and the capillary and venular lesions producing retinopathy and glomerulosclerosis. Evidence for other small vessel lesions in diabetes has been provided by Ditzel's studies of the conjunctival vessels³⁰ and by Blumenthal and Goldenberg's description of the capillaries of the extremities.³¹ Granted that genetic factors may be common to all, do the lesions depend also on environmental factors for further progression, and do the same factors affect the same lesions? The relative importance of inherited influence in causing vascular disease in the diabetic is unevaluated as yet. The most pertinent studies of environmental influence have been limited to the effects of chemical control of diabetes on retinopathy and nephropathy, and, indirectly for diabetes, of dietary fat on the incidence of atherosclerosis. Investigation of the course of the remaining vascular disease has been meager. The American Heart Association has recommended reduction of, or change to, polyunsaturated fat from dietary fat now consumed as a possible means of preventing atherosclerosis.³² The American Diabetes Association has not stated officially its views as yet.

Dietary prescription should be made in the management of diabetes mellitus. The diets most commonly used presently¹ are those known as the ADA (American Diabetic or American Dietetic Association) exchange list diets. The percentages of calories provided in these diets by each major foodstuff are approximately carbohydrate 40, protein 20, and fat 40—a proportion approaching that

in the general American diet. In light of present knowledge, it would seem advisable to modify the fat content both as to quantity and quality. If the total fat is decreased to 20 Gm. or less (ten per cent of calories of the commonly employed 1800 calorie diet), the diet may become sufficiently unpalatable to the patient to cause dietary unconformity. Moreover, there is the theoretically hazardous consequence of a rise in plasma triglyceride. Accordingly, reductions to 35 or 30 per cent of calories as fat would appear reasonable until further knowledge is at hand. In regards to quality, some replacement of animal fat containing long chain saturated fatty acids with vegetable fats containing short chain polyunsaturated acids can be made without undue annoyance of the patient.³³ The avoidance of meat and dairy fats, the use of vegetable oils for cooking, and the substitution of margarine high in polyunsaturated fat content for butter will aid in the general shift from animal to vegetable fat. Milk has been a valuable constituent of diabetic diets, but unfortunately its fat content is significant in that a quart contains approximately 40 Gms. of animal fat. Milk containing two per cent fat is now available with one milk exchange containing 5 Gm. of fat instead of ten.

In addition to dietary regulation, control of diabetes should be attempted as far as practical. Though there are some views to the opposite, most authorities recommend that a decrease of hyperglycemia be strived for. This may be difficult to arrive at, especially in the insulin-sensitive unstable diabetic. Furthermore, it is not certain that lipid derangements are corrected despite achievement of normoglycemia. Most studies purporting to show a low incidence of diabetic vascular disease when control is good have been made with measurements of retinopathy and nephropathy in juvenile diabetics. Surveys of the effects of chemical control on atherosclerosis in the middle aged diabetic have not been extensive or informative.

Periodic determinations of the plasma cholesterol and total lipids will assist in guid-

ing therapy. Elevations of these are usually related to poor diabetic control and are reversible by a adequate diabetic treatment. When hyperlipidemia is severe and persists after two to three months of apparent diabetic control, it is possible that another genetic defect causing elevated plasma lipids exists.³⁴ In this event, more drastic restriction of total fat input may be necessary to reduce total plasma lipids. If the abnormality is hypercholesterolemia only, the further use of polyunsaturated fats may be advisable. Whether or not plasma cholesterol depressing agents will be of value in the long term treatment of diabetes remains to be determined.

This brief review offers no specific description of the production of diabetic vascular disease, nor does it provide decisive support for the suggested changes in diet. There are no studies to date to show that the use of diets low in fat or with a shift from saturated to unsaturated fat will prevent or even delay the development of diabetic vascular disease. It is likely that only carefully controlled long term observations will determine their value. Most studies of the value of chemical control have been limited in end-point to the determination of small blood vessel lesions in the young diabetic. Still, it would appear that the inferences from the work of Keys and others are applicable to the diabetic and that diet may therefore be altered accordingly. As far as chemical control is concerned, even if normality is never achieved, an approach will bring about some degree of correction of lipid abnormality which may in turn benefit the diabetic patient. In all, an unbiased mind should be retained until more specific information is at hand.

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Biochemical Lesions In Diabetes Mellitus

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Biochemical defects associated with Diabetes mellitus involve assimilation of the three major foodstuffs, carbohydrate, protein and fats. Many of these lesions can be ascribed to insulin, *per se.*; however, it is increasingly apparent that a full description of the metabolic defects in experimental diabetes involve hormones of the pituitary and adrenal as well as insulin.

Glucose Utilization

Since sugar is readily measured in blood and urine, emphasis has been placed on the regulation of glucose metabolism in the control of the diabetic. In most body tissues there are three biochemical processes that may be involved as rate limiting steps in glucose utilization. These are: (1) permeation of the cell wall, (2) phosphorylation catalyzed by the enzyme glucokinase and formation of hexose phosphate, (3) phosphorylation catalyzed by phosphofructokinase and formation of hexose diphosphate.

Permeation of the cell wall—The classic

experiments of Levine et al.¹ have demonstrated that insulin changes the distribution of sugar in the eviscerated dog from a volume equivalent to extracellular fluid to one equivalent to total body water. Subsequent experiments with rat diaphragm muscle,² isolated perfused rat heart,³ adipose tissue⁴ and brain⁵ have allowed more extensive study of the role of insulin in transport of sugars across the cell wall. It would appear that insulin is involved in getting glucose into most body cells (Table I), with the possible exception of liver⁶ and brain.⁵ Hepatic cells appear to be freely permeable to glucose and although the brain is relatively impermeable to most substances, no defect in glucose utilization involving insulin has been noted. It would appear therefore that in the absence of insulin, the entry of glucose into most body tissues is impaired.

Glucokinase—Little free glucose is found in intracellular water. Once glucose enters the cell it is phosphorylated to form the six-

TABLE 1
BIOCHEMICAL DEFECTS IN DIABETES MELLITUS

DE- FECT	LIVER	MUS- CLE	ADI- POSE	BRAIN
Glucose Utilization	Yes	Yes	Yes	No
Permeability	No	Yes	?	
Glucokinase	Yes	No	?	
Phosphofructokinase	?	Yes	?	
Protein Synthesis	Yes	Yes	?	?
Amino Acid Transport	?	No		
Lipid Synthesis	Yes	?	Yes	?
Carboxylation of Acetyl				
CoA	No		?	
Synthesis from Malonyl				
CoA	Yes		?	

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Presented at a meeting of the Alabama Diabetes Association and the Department of Medicine of the Medical College of Alabama in Birmingham on March 19, 1961.

phosphate ester, glucose-six-phosphate (Figure 1.). In this reaction ATP and the enzyme glucokinase are involved. In diabetes there appears to be a defect in glucose phosphorylation in hepatic tissue.⁷ Since permeability of the cell is not involved it is assumed that this defect involves the enzyme glucokinase.⁸ Insulin treatment of diabetic animals will correct this defect in glucose phosphorylation, but 12 to 24 hours are required. This is in contrast to the effect of insulin on cell permeability which occurs immediately.

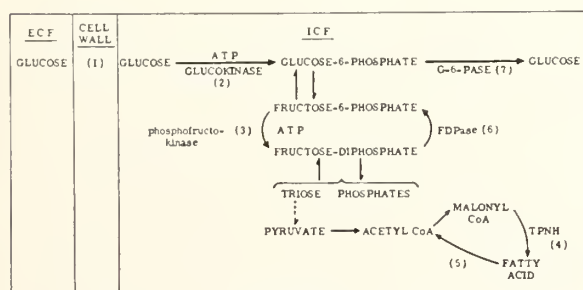


FIGURE 1.

Phosphofructokinase—Before glucose can be fully metabolized via glycolysis and the citric acid cycle, there are two reactions that it must undergo that are energy requiring. The first of these in phosphorylation involving glucokinase and the formation of hexose phosphate, the second is further phosphorylation via phosphofructokinase with the production of fructosediphosphate (Figure 1.). Recent experiments with the isolated perfused rat heart⁹ indicate that addition of insulin to tissue removed from diabetic animals will correct the permeability defect, but an impairment in the phosphofructokinase reaction remains. The defect in the second phosphorylation appears to involve pituitary-adrenal control since it is not observed in hypophysectomized diabetic animals. As yet these studies have not been extended to tissues other than heart muscle.

Glucose Production

Diabetes mellitus has long been characterized as a disease of over production as well

as under utilization of glucose. The liver is the tissue primarily involved in excess glucose formation, presumably from protein catabolism. The experiments of Houssay and of Long and Lukens have demonstrated that over production is not due to an absence of insulin, but rather is the result of an unopposed action of the pituitary and adrenal cortex.¹⁰

Several enzymatic changes have been described in diabetic liver that may contribute to the derangement of glucose metabolism in that tissue.¹¹ One of the first enzymatic alterations to be described was the increase in glucose-six-phosphatase activity.¹² Although an increase in the activity of this enzyme might be expected to influence the rate of hepatic glucose production it has been found that changes in the activity of this enzyme do not precede an increase in hepatic glucose production but rather follow such an increase by several hours.¹³ Adrenal cortical hormones and insulin are both involved in the control of this enzyme activity.

Other biochemical changes that occur in the diabetic liver and appear to be mediated by the adrenal glucocorticoids are: Increase in fructose diphosphate phosphatase;¹⁴ increased capture of amino acids by hepatic cells;¹⁵ and increase in glutamic-pyruvic transaminase.¹⁶

Protein Synthesis

Insulin is a general anabolic hormone involved in the synthesis of protein and fat as well as glycogen. The biochemical steps involved in protein synthesis are: (1) Transport of amino acids across the cell wall; (2) Activation of the amino acids; (3) Binding of activated amino acid by soluble Ribonucleic acids (SRNA); (4) Assembly of the protein molecule involving microsomal RNA.

Muscle—Studies with radioactive carbon labeled alpha-amino isobutyric acid have indicated that a number of endocrine hormones may be involved in the regulation of transport of amino acids into body cells.¹⁵ Insulin added in vitro enhances the incorporation of

labeled amino acids into the protein of isolated rat diaphragm;^{17, 18} further, this effect is not dependent upon the presence of glucose in the medium.¹⁹ The stimulation of protein synthesis in the isolated diaphragm by insulin is presumably independent of the effect of this hormone on glucose metabolism and does not appear to involve the entry of amino acids into the cytoplasm of the cells.²⁰ The observation that insulin stimulates the incorporation of labeled carboxylic acids and CO₂ into diaphragm protein suggests that this hormone is acting to promote incorporation of amino acids formed intracellularly and under conditions where transport of amino acids from extracellular to intracellular fluid is not involved.

Liver—Addition of insulin to liver slices obtained from alloxan diabetic rats will stimulate the incorporation of labeled glycine into the tripeptide glutathione.²¹ Incorporation of amino acids into protein obtained in cell-free systems of rat liver is reduced in tissues obtained from diabetic and hypophysectomized animals.²² Treatment of such animals with insulin over a period of several days will increase the amount of incorporation observed *in vitro*. Much greater effects on amino acid incorporation are obtained however, by insulin treatment of adrenalectomized animals.²³ These results would suggest that insulin is acting on some step in protein synthesis not involving intracellular transport, and further, this effect is opposed by the adrenal steroids.

Lipid Synthesis

Diabetes is characterized by an increase in fatty acid catabolism giving rise to metabolic acidosis and excretion of ketone bodies in the urine. Marked impairment of fatty acid synthesis has been observed in the diabetic although synthesis of cholesterol proceeds at a normal or accelerated rate.²⁴

Liver—The work of Dituri et al.²⁵ and of Siperstein²⁶ has suggested that a deficiency of TPNH is responsible for the reduced lipid synthesis observed in liver from diabetic animals. Long chain fatty acids are synthesized

by the condensation of "active acetate" units and this is a reductive process requiring four hydrogen atoms for every two-carbon unit added. The hydrogen necessary for this reduction is available in the form of reduced coenzyme I or II, i.e. DPNH or TPNH. The first step in assembly of long chain fatty acids resulting in the formation of butyryl-CoA requires TPNH. The direct oxidation of glucose-six-phosphate via glucose-six-phosphate dehydrogenase and six-phosphogluconate dehydrogenase produces two moles of TPNH. Any impairment of this metabolic route in diabetes could influence lipogenesis by decreasing the amount of TPNH available for reduction of acetyl-CoA. Although glucose-six-phosphate dehydrogenase activity is reduced in the diabetic liver, estimates of the contribution of this pathway to the overall metabolism of glucose in liver slices indicate no significant reduction in the diabetic.²⁷

Early studies on fatty acid synthesis in cell-free systems indicated that there were separate chemical reactions for fatty acid synthesis and for fatty acid oxidation.²⁸ However, in later work the two systems were not clearly distinguished in the experimental approach used. Much of the confusion concerning the regulation of lipogenesis in the diabetic results from studies on the reversal of the oxidative system. It is now clearly established that synthesis of fatty acids occurs in a soluble fraction of liver and the sequence of reaction is outlined in figure 2.²⁹ Fatty acid oxidation takes place in the mitochondrial fraction of hepatic cells.

Recent studies on fatty acid synthesis by soluble enzyme systems from liver would indicate that in the diabetic there is no defect in the initial reaction i.e. the carboxylation of acetyl CoA resulting in the formation of malonyl CoA.³⁰ Recent experiments by Numa, et al. (S. Numa, M. Matsushashi and F. Lynen, *Biochem. Z.* 334, 203; 1961) indicate that the defect in fatty acid synthesis in fasting is in acetyl-carboxylase. These authors conclude that the conversion of acetyl-CoA to malonyl-CoA or malonyl-X is the rate-limiting step in fatty acid synthesis. The difference in results obtained by Numa, et al.

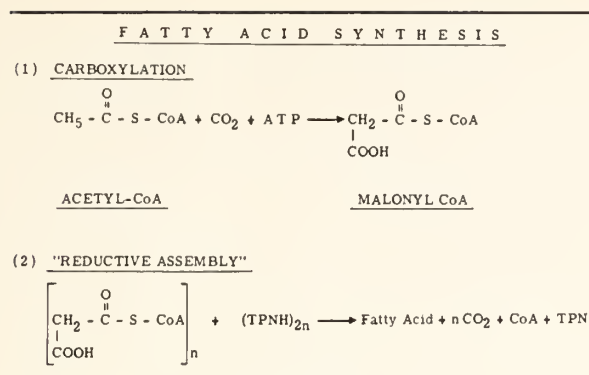


FIGURE 2.

and Gibson and Hubbard³⁰ is at present unexplained. However, in either case the defect in fatty acid synthesis does not appear to be due to a lack of TPNH. There does appear to be a marked impairment in the further incorporation of malonyl CoA into fatty acid that is not overcome by the addition of acetyl CoA, butyryl CoA, or TPNH. The specific lesion in fatty acid synthesis in the diabetic liver has yet to be fully described; however, it does not appear to be the result of any deficiency in available hydrogen (TPNH) or to involve formation of butyryl CoA.

Adipose tissue—Insulin added in vitro will stimulate fatty acid synthesis by the rat epididymal fat pad.⁴ Such stimulation occurs only in tissue removed from normal animals and requires the presence of glucose. There is an impairment of fatty acid synthesis in adipose tissue obtained from diabetic animals and partial correction of this defect can be obtained by the addition of insulin in vitro.⁴ Only recently has an enzyme system from adipose tissue capable of synthesis of fatty acids been described.³¹ Further study is necessary for a more complete description of the defects in fatty acid synthesis in adipose tissue.

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Non-Glucose Melliturias

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In the past the non-glucose melliturias were considered to be of small practical importance; indeed, in the minds of most physicians, they were considered a rare annoyance to confuse the diagnosis in patients suspected of having diabetes mellitus. The recent upsurge of interest in genetics has focused attention on these conditions, since most are heritable disorders. The rapid advances in our understanding of carbohydrate biochemistry has permitted an understanding of their etiology, which has made them intellectually more challenging. Finally, the application of paper chromatography to the detection of urinary sugars has established an easy and rapid method for detection and identification of urinary sugars which has led to the recognition of new syndromes associated with mellituria. It should be emphasized that many of the non-glucose melliturias are not benign if the proper diagnosis is not promptly made.

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From the Department of Pediatrics, Johns Hopkins University School of Medicine and The Johns Hopkins Hospital. This work was supported in part by Grant B-1626 from The National Institutes of Health, Department of Health, Education and Welfare.

Presented at a meeting of the Alabama Diabetes Association and the Department of Medicine of the Medical College of Alabama in Birmingham on March 19, 1961.

Table I indicates the sugars which have been found in the urine. Those sugars which are noted with an asterisk have been associated with an inborn error and in most instances a disease.

TABLE I
SUGARS IDENTIFIED IN URINE

5-carbon sugars	3-carbon sugars	Disaccharides
Ribose	Glucose*	Lactose*
Desoxyribose	Galactose*	Maltose*
Xylose	Fructose*	Sucrose*
Arabinose		
Ribulose		
Xylulose*		

Only three methods for detecting urinary sugars will be considered: 1. Benedict's qualitative reaction; 2. Glucose oxidase reaction; and 3. Paper Chromatography.¹ For routine screening purposes the author prefers the standard qualitative Benedict's reaction. It has the disadvantages of being a bit more involved than the tablets currently in vogue, but it is much easier to interpret lesser concentrations of sugars. This is a non-specific, copper-reducing reaction; hence it is useful for detecting all reducing sugars. Parenthetically, it should be stated that sucrose is the only one of the commonly encountered sugars in the urine which is non-reducing. After it has been determined that a urine has a reducing substance in it, the glucose oxidase 'stick' is very useful. If the Benedict's reac-

tion is positive but the glucose oxidase reaction negative, one is likely dealing with a non-glucose mellituria and must then proceed to paper chromatography for further identification. The latter technique is quite simple but requires equipment not usually found in a doctor's office. I would like to re-emphasize that one will miss all non-glucose melliturias if the glucose oxidase 'stick' is used as the screening technique.

It must be appreciated that all of the sugars which have been noted in Table I have been found in the urine of normal individuals. In some instances the urine must be greatly concentrated in order to demonstrate the sugar; in others the sensitive technique using paper chromatography is sufficient; in still others the presence of the sugar in the urine is dependent upon, and a reflection of, ingestion of the sugar. In the normal individual, the presence of a disaccharide in the urine is due to its ingestion. The exception is lactose in the urine of the pregnant and lactating female; the urinary lactose is derived from the breasts.² The trace amounts of glucose and fructose in normal urine can be considered of endogenous origin but galactose is probably always exogenous. Ribose, desoxyribose, xylulose, ribulose are of endogenous origin, whereas xylose and arabinose are from plant sources. Drugs are capable of increasing the urinary excretion of certain sugars; the relationship of morphine to pentosuria is an old observation.³ Mellituria often is associated with hepatic disease due to the failure of the liver to metabolize the ingested sugar rapidly enough to prevent its reaching the systemic circulation with resultant excretion by

the kidneys. Renal disease can also result in mellituria due to failure of reabsorption by the tubules. Gastrointestinal disturbances frequently have associated mellituria; the disaccharides are frequently found. We feel that perhaps two mechanisms could be involved here. The disease process probably alters the permeability of the intestinal mucosa. Secondly, the disaccharides may be transported intraluminally too rapidly for the hydrolytic enzymes to split them; or more probably, the production or release of the hydrolytic enzymes is suppressed secondarily by the disease process. Finally, it has been observed that newborns and especially premature infants have a higher concentration of several of the sugars in their urine in the first week or two of life than does the older infant or child.⁴ This is probably secondary to hepatic immaturity.

There are several special circumstances in which mellituria has been described which are worthy of brief comment. Inall⁵ reported an infant with lactosuria with a clinical picture consonant with that seen with an intestinal lactase deficiency, but the lactose intolerance subsided after several months abstinence from lactose. Sucrose and lactose have been found frequently, but not invariably, in the urine of infants with hiatus hernia. Sucrosuria has been described in the older literature in patients with pancreatic disease. Indeed one report describes such a patient whose presenting symptoms were typical diabetes.⁶ There have been no recent reports to confirm these observations.

A brief comment is in order on those heritable forms of mellituria which are sympto-

TABLE II
NON-GLUCOSE MELLITURIAS DUE TO A HERITABLE DEFECT

Name	Sugar	Defect	Symptoms
Essential pentosuria	1-xylulose	TPN xylitol dehydrogenase	Benign
Essential fructosuria	Fructose	Fructokinase?	Benign
Fructose intolerance	Fructose	Fructoaldolase?	Hypoglycemia, mental symptoms
Fructose idiosyncrasy (11)	Fructose	?	Vomiting, dyspepsia
Galactosemia	Galactose	Gal-1-P transferase	Jaundice, hepatomegaly, cataracts, mental retardation
Familial lactosuria	Lactose	Lactase	Diarrhea, failure to thrive
Familial sucrosuria	Sucrose	Invertase	Diarrhea, failure to thrive
Familial maltosuria	Maltose	Maltase	Diarrhea, failure to thrive

matic. By now no elaboration is necessary regarding the symptomatology or the urgency of the need for prompt diagnosis and institution of proper therapy in galactosemia. Failure results either in permanent impairment or even death. Fructose intolerance⁷ in childhood has many symptoms and findings in common with galactosemia, except cataract formation. Recently the condition has been reported in an adult with bizarre mental symptoms which disappeared when fructose was removed from the diet.⁸

The familial disaccharidurias follow a similar clinical pattern. The young infants have a hyperchloremic acidosis; chronic, intractable diarrhea; frequently vomiting; and a marked failure to thrive. Death ensues if the diagnosis and proper treatment is not effected. The mellituria, it should be noted, is not marked.^{9, 10}

Summary

Non-glucose melliturias can be categorized by the following schema.

1. The low concentration of various sugars in normal urine.
2. Secondary mellituria. This includes those associated with hepatic, renal and gastrointestinal dysfunction. Drug-induced mellituria is also considered.
3. The most recently recognized cause of mellituria is that due to an heritable defect of specific gastrointestinal hydrolytic enzymes.

4. The more classical melliturias are due to heritable disorders of carbohydrate metabolism, affecting primarily in the liver.

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Glucose Regulation

Role of Alpha And Beta Cells Of Pancreatic Islets

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It is now clear that pancreatic islet cells form at least two distinct hormones—insulin by the Beta cells and glucagon by the Alpha cells. Each of these hormones is a polypeptide. Some of the known factors involved in the synthesis, storage, release, transport and finally the action at the cell level will be considered. These detailed aspects of insulin formation indicate the present incomplete understanding of hormone (or protein) synthesis. However, the steps considered do provide a basis for the evaluation of insulin action in the normal, in the insulin-sensitive and in the insulin-resistant diabetic patient.

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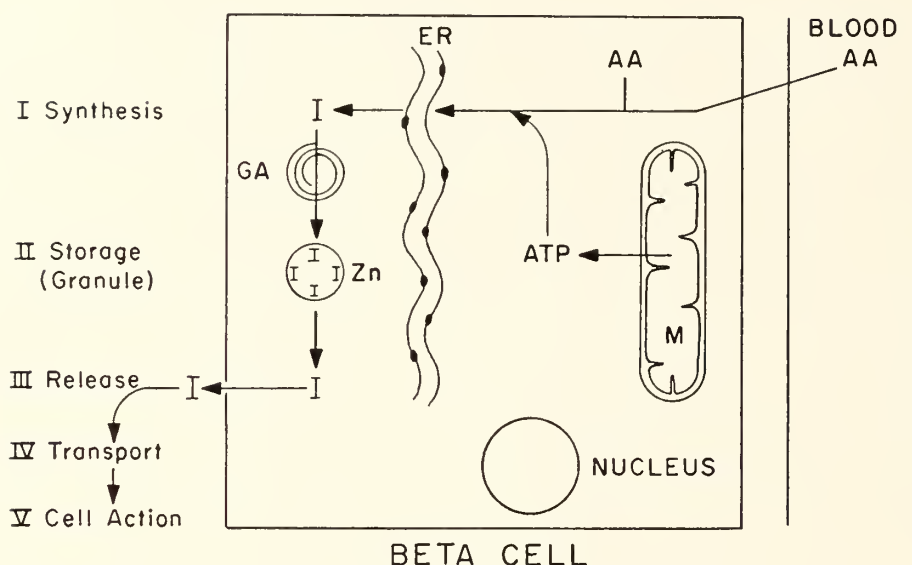
Presented at the Alabama Diabetes Association annual meeting, Point Clear, Alabama, June 24, 1960.

Morphology of Islets

The pancreatic islets of the human pancreas contain at least three cell types—Alpha, Beta and Delta—which can be distinguished on the basis of staining characteristics. Recent studies with electron microscopy by Lacy¹ indicate characteristic differences between the Alpha and Beta cells. This technique has demonstrated that both cell types are enclosed by a distinct, continuous membrane and their nuclei are surrounded by a double membrane. The cytoplasm of both the Alpha and Beta cells² contains endoplasmic reticulum which is probably concerned with hormone synthesis, mitochondria which are the site of oxidative metabolism and energy formation, granules which represent stored hormone, and portions of the Golgi complex which may play a role in the storage process. The endoplasmic reticulum is composed of lamellar membranes with small cytoplasmic granules, probably ribonucleic acid. The individual secretory granules (hormonal or pre-hormonal) are surrounded by a distinct, smooth membrane. Histochemical studies using the fluorescent antibody technique developed by Coons and Kaplan have demonstrated insulin within the Beta cells. The

Fig. 1

POSSIBLE SEQUENCE FOR FORMATION OF INSULIN



RELATIVE DEFICIENCY OF INSULIN, OR DIABETES, MAY RESULT FROM INTERFERENCE AT STEPS I-V. (AA=AMINO ACID, ER=ENDOPLASMIC RETICULUM, M=MITOCHONDRIA, GA= GOLGI APPARATUS, I=INSULIN, Zn= ZINC, ATP=ADENOSINE TRIPHOSPHATE).

Delta cell, first described twenty-five years ago, is not present in all species. However, this cell is demonstrable in the human pancreas. It is likely that with more precise techniques a functional role of the Delta cell will be found.

Synthesis and Storage of Insulin by Beta Cells

The insulin molecule consists of 51 amino acids arranged in two polypeptide chains connected by two disulphide bridges.³ A number of essential amino acids are present and these presumably must come from the diet. The other amino acids may be synthesized in the Beta cell or transferred to the Beta cell after synthesis at other sites such as the liver. The sulphur-containing amino acids are especially important for insulin synthesis

constituting some twelve per cent of the amino acid residues. Although the exact chemical structure is established, little is known about the mechanism or the specific site of insulin formation. A possible sequence¹ for insulin synthesis is shown in Figure 1. This suggests that energy, in the form of adenosine triphosphate, from mitochondria, may serve for amino acid transformation and peptide bond synthesis. The final synthesis may be accomplished by the endoplasmic reticulum of the cytoplasm. Insulin may enter the blood stream directly or be stored in the Beta cell. It has been suggested that the Golgi apparatus plays a role in concentrating and storing insulin in the Beta cell. Zinc is present in rather large amounts in the Beta cells. The exact role of zinc in the formation, storage, and release of insulin is not clear. However, it is probable that insulin is stored

as an insoluble zinc complex within the Beta cell granule.

Release and Transport of Insulin

The major known stimulus for insulin release from the Beta cell is an elevation of blood glucose concentration.⁵ The mechanism by which glucose produces the solubilization of the zinc-insulin complex and escape of the protein hormone from the cell is unknown. However, the effect is specific for glucose; similar but structurally distinct hexoses such as fructose or mannose do not cause Beta cell degranulation and insulin release.

Insulin after entering the blood stream is transported "bound" to one or more of the serum protein fractions. The circulating insulin may be inactivated by the proteolytic action of "insulinase." Insulin antagonists may cause a loss of biologic activity. Known insulin antagonists include specific antibodies to insulin, insulin binding globulins and certain hormones.⁶ Growth hormone, hydrocortisone and epinephrine under certain conditions have been shown to reduce the action of insulin. The significance of "insulinase" and insulin antagonists is not entirely clear at this time. Mirsky⁷ has postulated that diabetes mellitus is the result of increased "insulinase" activity. The importance of insulin antagonism is most clearly demonstrated in patients with insulin resistance. Studies of Berson and Yalow⁸ have shown that serum from a number of insulin resistant patients contains high levels of insulin antibodies which are capable of "binding" large quantities of insulin. This explains why hundreds of units of insulin may be required to "saturate" the antibody binding before any effect on blood sugar occurs in such patients. Insulin is able to cross the capillary membrane and traverse the extra-cellular space, possibly again in association with proteins. Finally it reaches the individual cells where the major effect appears to be an acceleration of glucose entry into cells. This cellular action of insulin has been shown to occur in many tissues; quantitatively the predominant action is on adipose tissue and muscle. It has

been suggested, but not proved, that insulin insensitivity may result from a failure of cells to respond to insulin.

Possible Mechanisms for Producing Insulin Deficiency

Theoretically a deficient insulin effect manifest by hyperglycemia may occur with an impairment of the normal sequence of synthesis, storage, release or transport of insulin as illustrated in Figure 1. The primary defect in human diabetes mellitus is not known. It is likely that different mechanisms are responsible for the production of relative insulin deficiency, the common denominator in diabetes mellitus. For example, in the "maturity onset-stable type" of diabetes the Beta cells and Beta cell granules are present in normal members at the time of onset. Furthermore the insulin-like activity of the pancreas and of fasting serum is within the normal range. Yet, such patients are unable to respond to "physiologic hyperglycemia" with an increased output of insulin. It is in this group that the sulfonylureas are most effective. They act to increase the release of insulin.

Glucagon

Glucagon is a specific hormone produced by the pancreatic islets, most likely in the Alpha cell. It is a straight chain polypeptide consisting of 29 amino acids.⁹ Glucagon formation and release is even less well characterized than is the case for insulin. Recent studies with an immunoassay technique by Unger¹⁰ have shown measurable amounts of glucagon in circulating blood. The blood level rises in response to hypoglycemia, the major factor known to influence the release of this hormone.

Control of Blood Sugar

The major stimulus for the release of either hormone appears to be a change in the circulating blood glucose concentration. Figure 2 shows how a "physiologic elevation" of blood glucose results in insulin release; the action

Glucagon As A Practical Tool For Hypoglycemia

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Insulin and Glucagon are both products of the Islands of Langerhans of the pancreas but with diametrically opposing actions. When Banting and Best first utilized a crude extract from the pancreas to lower the blood sugar of the diabetic, it was noted on occasion that there was an initial rise in the blood sugar before the anticipated fall. It was postulated by Kimball and Murlin¹ that a substance not insulin was present in the pancreatic extracts which created the hyperglycemic effect. After Abel, in 1926, produced a purified crystalline insulin, the previously noted initial rise of the blood sugar was absent. During a period of thirty years of investigation, a confusing array of explanations for this phenomenon was compiled. It fell to Van Itallie in 1956, to clarify the picture,² by his identification of this substance, we now call glucagon.

Glucagon is a product of the Alpha cells of the Islands of Langerhans, insulin of the Beta cells. It is a protein substance, a hormone of specific hyperglycemic effect, with a molecular weight of 3,500. It is now available in a stable purified crystalline form.

The hyperglycemic effect of glucagon is mediated through the enzyme systems of the liver. The glycogenolytic action is the result of an increase of active phosphorylase in the liver.³ Liver glycogen is catalyzed to glucose-1-phosphate when glucagon activates the hepatic phosphorylase, resulting in glucose through the action of phosphoglucomutase and glucose-6-phosphate.

The action of glucagon has been compared to the hyperglycemic action of epinephrine. These substances are not interchangeable, as glucagon has few untoward side effects whereas epinephrine in hyperglycemic producing doses initiates palpitation, dizziness, headaches and occasionally more serious cardiac arrhythmic and pressor-effect produced cerebral hemorrhages.⁴ Glucagon is

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a more potent glycogenolytic agent than epinephrine, molecule for molecule. The release of glucose by epinephrine is through its action on the muscle glycogen and may be counteracted by ergotamine.

With the preparation of a crystalline product of the alpha cells of the pancreas by Staub, Sinn, and Behrens,⁵ the chemical structure of glucagon was established in 1956. By the use of enzymatic digestion and chromatographic techniques glucagon was found to contain two amino acids, methionine and tryptophan, neither present in the insulin molecule. Insulin on the other hand contains three amino acids, cystine, proline, and isoleucine none of which is present in glucagon. Glucagon has been demonstrated to have a reciprocal relationship to insulin by Foa.⁶ With alimentary hyperglycemia there is a discharge of glucagon and insulin from the alpha and beta cells of the Islands of Langerhans, which both mobilizes the liver glycogen for storage in the periphery and at the same time prepares the liver for the uptake of the newly absorbed glucose.

Glucagon in summary exerts its primary effect upon the liver in production of glucose. It has no demonstrable effect upon release of glycogen from the muscle nor does it inhibit the uptake of glucose by that tissue.⁷ A less significant action is upon the renal tubules, producing an increase in sodium, potassium, chloride, phosphate and radioactive Iodine excretion.⁸ Another action of glucagon is that it tends to decrease gastric motility and secretion, with a lessening of hunger.

Our clinical evaluation of Glucagon was begun in 1958. The hormone was initially utilized to counteract the insulin produced hypoglycemic reactions in children attending a closely supervised diabetic summer camp. Prior to the advent of glucagon such hypoglycemic reactions were dealt with by oral glucose or in the severely shocked patient who was unable to swallow, by intravenous glucose. Unavoidably, the supplementary carbohydrate needed to correct the hypoglycemic reaction was often given in excess of the actual need by both the oral or

parenteral route of administration. Although the correction of the existing hypoglycemic symptom was prompt and complete, it posed the problem of a chemical imbalance with a hyperglycemic rebound. Another real problem encountered with the use of intravenous glucose in these children was that of a local irritation in the skin and thrombophlebitis of the vein. Glucagon, answered the problem of both rebound and irritation.

Since the initial experiences with glucagon, its use has been continued in office practice. An aqueous solution of glucagon in dosage of one milligram has been used in all episodes of hypoglycemia that would previously have required intravenous glucose to correct the glucose deficiency. A response from the subcutaneous administration of glucagon is usually evidenced in about ten minutes. The lethargy of hypoglycemia which precludes the diabetic from partaking of oral feedings when urgently needed, or even the convulsive reaction is attenuated by glucagon. Results of glucagon administered by hypodermic are quite reliable. The action is remarkably smooth, though less rapid than the usual response to intravenous glucose. After about five to ten minutes, the diabetic has a restored sense of well being and ability to partake of food that is so frequently forthcoming as an impending next meal. The experience of usefulness of glucagon has been very satisfactory in camp activities, hospital and in the home.

The emotional stress of the patient or a companion of the diabetic, with a fear of insulin reactions and its multiple patterns of untoward behavior, is greatly lessened with the availability of glucagon. Since glucagon in a solution is not stable, unless under refrigeration, it is kept on hand in crystalline form and is immediately soluble in the accompanying diluent. Anyone capable of the simple technique of mixing the powder and fluid and administering a hypodermic of the solution is thus empowered to abort hypoglycemia in a safe and prompt fashion. One of the problems in demanding that a diabetic maintain close chemical control of their diabetic state

has been in minimizing the immediate or delayed effects of hypoglycemia. The diabetic will allow glycosuria and hyperglycemia to remain uncorrected without regard for the seriousness of such a condition for very long periods. On the other hand, the symptomatology of an insulin reaction is so stressful that glycosuria is often looked upon as a safety factor, instead of a dangerous sign of uncontrolled diabetes. As time goes on and the remarkable effect of glucagon is more widely appreciated, the fear of hypoglycemia will be less felt. The physicians' ability to convince diabetic patients of the desirability of good chemical control of his diabetes will be facilitated in those who now shrink with fear from insulin reactions.

For the patient who requires supplementary or exogenous insulin the availability of glucagon is important. The hospitalized or ambulatory patient being introduced to insulin has available a safe and effective drug that will ameliorate the fright of shock. The stabilization is not likely to be delayed or complicated by marked increases in blood sugars which ordinarily occur when oral or intravenous glucose is used to combat insulin shock. Glucagon alone will sufficiently elevate the blood sugar to terminate the hypoglycemic episode.

As a safe and an effective parenteral drug for the termination of hypoglycemia, glucagon stands forth as an agent with unusual advantages and a paucity of disadvantages in the therapeutic armamentarium of the physician in the Joslin era of Diabetes.

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be tested!

Diabetes In Pregnancy

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The association of pregnancy and diabetes mellitus has challenged the medical profession since long before the discovery of insulin. Skipper gives credit for the first case report to Bennewitz.¹ In 1826 this early reporter described a woman suffering from intense thirst and polyuria during three successive pregnancies in whom "the taste of the urine resembled beer but was much sweeter" and the urine contained "two ounces of saccharine matter per pound." J. Whittridge Williams thoroughly reviewed the cases recorded up to 1909 and tabulated 57 cases of pregnancy occurring in diabetics and nine of diabetes occurring in pregnancy.² At the time though, blood sugar determinations were few, and the diagnosis of diabetes was established mainly by symptomatology and high urinary sugar content. The total of 66 pregnancies occurred in 43 women. Twenty-seven per cent of the mothers died during labor or shortly thereafter, and another 23 per cent succumbed within two years after delivery. The infant survival was 59 per cent. In 1928, Wilder and Parsons collected 55 cases in 51 patients who had received insulin as needed.³ The maternal mortality had declined to 12 per cent, but the fetal mortality was 42 per cent. Skipper found 118 cases to report in 1933.⁴ The maternal and fetal mortality remained virtually unchanged at 12 per cent and 45 per cent respectively. Contrast this limited experience 28 years ago with now at the Joslin Clinic alone where in

the past 20 years 900 viable cases have been cared for with negligible maternal loss and a viable fetal survival approaching 90 per cent.⁴ Pregnancy and diabetes can only occur more frequently yet in the future, since an estimated 50,000 juvenile diabetic women are now, or shortly will be in the child bearing age.⁴

It is now recognized that gestational abnormalities occurring in the established diabetic may appear in the prediabetic phase as well. During this prodromal period, hyperglycemia in pregnancy may be transient only, with remission after parturition. It is believed that the patients concerned will become permanently diabetic later. On the other hand, permanent diabetes may develop with the pregnancy. Accordingly, the following discussion will deal with pregnancy in diabetes whether the latter condition be permanent or transient.

The Effects of Diabetes on Pregnancy

With careful clinical study the effects of diabetes on the course of pregnancy have become more clearly defined. It has been suggested that fertility is normal or even increased in the diabetic woman.⁵ The gestational difficulties encountered begin in the second trimester when the incidence of abortion exceeds the normal. It is in the third trimester, however, that most of the abnormalities take place. Perinatal fetal loss may be related to

hydramnios or toxemia, or due to stillbirth without apparent cause. The infants are often large, either actually or relatively so because of edema. They have been referred to as "large prematures".⁶ Congenital anomalies occur with incidence exceeding the expected normal. In autopsy studies there has been found hyperplasia of the islets of Langerhans with infiltration of eosinophils. The islets are not only more numerous but contain beta cells unusually full of staining granules.⁷ Extramedullary erythropoiesis in the liver and spleen also has been described, and there is some evidence for increased occurrence of neonatal jaundice. Infants who die in the neonatal period usually do so because of prematurity or hyaline membrane pneumonia. This latter complication is particularly common when early cesarean section has been made in mothers with hydramnios.

The pathogenesis of these abnormalities is far from clear. The relative importance of insulin insufficiency per se, of a component of the inherited diabetic state undescribed as yet, or of a possible interaction of the two remains to be determined. Since in cases with mild hyperglycemia abnormalities may occur despite good chemical control, it is possible that an underlying diabetic diathesis is more relevant than insulin insufficiency alone. Still, lack of insulin has not been eliminated as causal in any part of the diabetic state, for present means of estimation may not be sufficiently sensitive to reveal small degrees of insulin insufficiency.⁸ From clinical observation, it is generally accepted that good control will prevent many of the complications. Ketoacidosis is very liable to cause fetal death, particularly in the second trimester, and also has been suggested as a cause of congenital defects. On the other hand, it is not known if control carried to the point of continuous normoglycemia will bring about maximal infant survival. In a study of the use of insulin in mild transient diabetes, Wilkerson found no effect other than a decrease in fetal weight.⁹ Investigations of insulin deficiency per se have been made in pregnant alloxan diabetic rats.¹⁰ Without insulin the

fetal loss was high, while with insulin there was increased salvage but not to the point of normal. It is of interest that the weights of the fetuses of the diabetic rats were actually decreased. Excessive weight developed when the gestational period was abnormally long.

Specific factors proposed to cause the abnormalities have been imbalance of female sex hormones, and excess of adrenocortical, growth, or thyroid hormones. The concept of sex hormone imbalance in diabetic pregnancy was proposed by Dr. Priscilla White of the Joslin Clinic.¹¹ In earlier studies Smith and Smith reported an increase of chorionic gonadotropin and decreases of estrogen and progesterone in the blood and urine of patients with toxemia.¹² White made similar observations in diabetic pregnancies, and correlated fetal loss with these findings. Moreover, she observed fetal survival with hormonal replacement in deficient cases. The inference is that chorionic gonadotropin is utilized in the production of estrogen and progesterone, and that a block in production could account for the findings. Confirmation of the findings is urgently needed.

The possibility that increased activity of the adrenal cortex may be responsible for the pregnancy complications was suggested by Hoet.¹³ In studies of pregnant rabbits treated with cortisone or corticotropin there was hyperglycemia, a depletion of placental glycogen, and a high abortion rate. In studies of humans, however, Plotz and collaborators found the mean daily urinary corticoids of diabetic pregnant patients equivalent to those of normal pregnancy except for some elevation in the second trimester.¹⁴ Little and co-workers measured the plasma 17-hydroxy-corticosteroids in women with abnormal glucose tolerance during pregnancy.¹⁵ Half had been treated with 15 units of NPH insulin daily. There were no differences among these two groups and a control group. Accordingly, it would not appear that production of glucocorticoids is in excess of that seen in normal pregnancy. In fact, it is not certain that glucocorticoids are increased even in normal pregnancy.¹⁶ Plotz and co-workers

in their elaborate studies discovered an abnormal rise of urinary androsterone and etiocholanolone in the third trimester.¹⁴ They suggested that a placental enzymatic defect might interfere with the normal conversion of these compounds to estrogen to account for both their increase and the decrease of estrogens found by White.

It has been suggested also that growth hormone may be implicated because of the large infant size. A high concentration was found in the placental blood of one diabetic woman,¹⁷ but difficulties in methodology have prevented any detailed studies of this aspect. Infants of acromegalic women are not said to have the characteristics of those born of diabetic patients. Finally, assay of thyroid function by the serum protein-bound iodine concentration revealed no deviation from control values.¹⁸

Kass has reported recently an increased incidence of prematurity and neonatal death in pregnancies with asymptomatic bacteriuria.¹⁹ With treatment these complications were lessened. In view of the frequency of urinary infection in diabetic women, such a condition might play a role in the production of abnormalities.

The Effects of Pregnancy on Carbohydrate Metabolism

The effects of pregnancy on carbohydrate metabolism in both normal and diabetic pregnancy have received much attention. Abnormalities of carbohydrate metabolism may appear during pregnancy and remit after parturition. The occurrence of glucosuria without hyperglycemia in pregnancy is well known and has been shown to be due to decreased tubular reabsorption as well as increased glomerular filtration.²⁰ But it is not known if this form of renal glucosuria with normal glucose tolerance represents the diabetic diathesis. In one study, an incidence of 18 per cent of glucosuria in pregnancy was found with an increased percentage of large babies and abnormal parturition in the mothers testing positive. But since glucose tol-

erance tests were not reported, it is not known if the pregnancy abnormalities were in those with renal glucosuria alone or rather limited to patients with hyperglycemia and glucosuria. An 18 per cent incidence of glucosuria would seem high if it were due to the diabetic state by itself. The subject is of interest because of the preliminary report by Ackerman et al of the development of diabetes in patients with renal glucosuria.²¹ Further studies of large groups should throw light on this matter.

In the absence of other cause, elevation of the blood sugar developing in the course of pregnancy indicates the diabetic state. Hyperglycemia may be mild or severe, and transient or permanent. In spite of numerous studies, however, the mechanism of production of elevated blood sugar remains unexplained. Examination of glucose tolerance by the intravenous route has not shown as much decrease of tolerance as apparent from the oral route.¹⁸ Insulin tolerance appears to be reduced.²² It is possible that the hormonal derangements discussed above could cause increased glucogenesis, insulin resistance, or both. Another cause to be considered emerges from the recent observation of Freinkel and Goodner that the placenta degrades insulin.²³ Such activity would help to explain the rising insulin requirement so often occurring in pregnant diabetics in the third trimester followed by precipitous fall immediately after delivery. Finally, continued glucose stimulus or unknown factors of pregnancy in the pre-diabetic might in some way affect beta cell function so that inadequate insulin is secreted either temporarily or permanently. Such a mechanism would explain the view of Pyke that multiple parity is diabetogenic.²⁴ The concept of a decreased beta cell reserve is hard to reconcile, however, with the recent limited but significant observation of Welsh that insulin-like activity of the serum after glucose stimulation in pregnancy hyperglycemia was higher than normal.¹⁸

Extensive studies of glucose tolerance in pregnancy have served to delineate some of the patterns observed. The most common

finding apart from normal is a delay in the fall of the tolerance curve with the blood sugar remaining slightly above the fasting level at two and three hours (Hierwitz,²⁵ Lund and Weese,²⁶ Cobley.²⁷) Since this occurs so commonly, and the peak levels are not abnormal, the delay has been attributed to a retardation of gut absorption rather than a defect in utilization of glucose.²⁶ Still, it is not certain that this response is benign.

The monumental studies organized by Wilkerson are especially revealing of the incidence of glucose tolerance tests compatible with the diagnosis of diabetes.^{28, 29} In 762 randomly selected women tested during each trimester, seven per cent had positive tests. Hyperglycemia was found in all trimesters but most commonly in the third. Fifty per cent of the patients gave histories of abnormal pregnancies, familial diabetes or had hyperglycemia following 50 grams of glucose. Of these, 11 per cent had positive tests. In the remaining 50 per cent with negative history and normal glucose response, only three per cent had positive tests. In some disagreement though are the findings of Welsh.¹⁸ Using historical criteria similar to those of Wilkerson but omitting the 50 gram challenging dose of glucose, and using the same standards to establish a diabetic glucose tolerance test, he found 48 per cent with positive tests. The discrepancy is probably related to case selection.

The Management of Diabetes in Pregnancy

In general, pregnant women with carbohydrate disturbance will present themselves to the physician in three groups. They will be established diabetics, they will have developed symptomatic diabetes during the pregnancy, or they will be diabetic suspects by history or random glucosuria.

It is of particular importance to disclose the third group for preventive medicine purposes as well as for pregnancy management. All pregnant women when first seen should be questioned about the presence of diabetes

in the immediate family, and the occurrence of past abnormalities in pregnancy discussed in the previous section. If a positive history is obtained, or if random glucosuria by oxidase strip is observed, the patient should receive a glucose tolerance test. If the patient is prediabetic, the tolerance may not be impaired until the third trimester.⁹ Accordingly, where suspicion is high it may be necessary to conduct tests in the second and third trimesters both. If there is an abnormal peak of the tolerance curve, the patient should be considered diabetic for purposes of management. Even if tolerance is normal throughout pregnancy but there is strong suspicion of the prediabetic state by history, it may still be desirable to view the patient as diabetic.

White has advocated a system of patient classification in accordance with the duration of diabetes and the presence of vascular disease (Table I). The grouping is of importance not only in determining treatment but also in predicting outcome. Though the same difficulties may be encountered throughout the course of diabetes, they are

TABLE I. CLASSIFICATION OF DIABETIC PATIENTS AS TO RISK OF PREGNANCY (WHITE)

- Class A—Diabetes shown by glucose tolerance test
- Class B—Diabetes with onset after age 20, duration 0-9 years, and no vascular disease
- Class C—Diabetes with onset between ages of 10 and 19, duration 10-19 years, and no vascular disease
- Class D—Diabetes with onset before age 10, duration 20+ years, and vascular disease evidenced by calcification of leg arteries and retinopathy
- Class E—Diabetes with calcified pelvic arteries
- Class F—Diabetes with nephropathy

more common as diabetes advances. The fetal loss in Class A is only a few per cent, whereas it increased with the duration of diabetes and appearance of complications to approach 50 per cent or more in the presence of nephropathy.

Most authorities advocate that control of the diabetes be carried out so far as possible. Diabetic diets should be prescribed even for those listed as Class A who may have minimal abnormality of the glucose tolerance test only. The total caloric value should be comparable to that ordinarily recommended for the diabetic, plus a slight increase because of pregnancy. In the distribution of foodstuffs, it may be desirable to give protein equivalent to 1.5 gm./kilogram. Such an approach can be easily accomplished in the commonly used 1800 calorie diet, for example, by changing the grams of carbohydrate, protein, and fat from 180, 80 and 80, to 180, 90, and 75 respectively. Insulin of an intermediate acting type should be given if diet restriction fails to prevent hyperglycemia in the Class A patient. In the newly discovered as well as in the established diabetic, the rise in insulin requirements which often occurs during the last trimester may be double or even triple the initial dose. Moreover, those not needing insulin previously may do so at this time. A point of importance in judging control is that the renal threshold for glucose may decrease in the diabetic as well as the non-diabetic pregnant patient. This phenomenon in the pregnant diabetic woman may be somewhat different from the renal glucosuria of the non-diabetic pregnant patient, since increased glomerular filtration without necessarily a decrease in tubular reabsorptive capacity appears adequate to cause glucosuria.³⁰ In any event, it is clear that frequent blood sugar determinations are necessary to assure satisfactory control.

Dietary restriction of sodium is advisable in all cases of diabetic pregnancy. It is possible that edema, toxemia, and perhaps to some extent chronic hydramnios may be prevented. The degree of restriction should be gauged by the duration of diabetes, and the appearance of conditions associated with sodium retention. In the Class A patient, omission of added salt at the table or in cooking during the last trimester may be sufficient. Sodium deprivation should become more stringent with advance in classification so

that a patient in Class D would receive less than a gram of sodium daily. The addition of diuretic agents is indicated if satisfactory sodium restriction is not attained. Recently it has been claimed Diuril® is hyperglycemic.³¹ White, however, did feel that this agent had an adverse effect on insulin requirements in pregnancy.³²

The employment of sex hormones (estrogens and progesterone) to correct "hormone imbalance" has been strongly advocated by the workers at the Joslin Clinic.⁴ In their hands, the use of these agents has been associated with fewer abnormalities of pregnancy and increased fetal salvage. Unfortunately, these findings have not yet been confirmed,^{33, 34} and others omitting the use of hormones have arrived at fetal salvage equivalent to White's.³⁵ All of these studies have been criticized, however, because of the limited number of young patients with long standing diabetes, the failure to use similar hormones, or the lack of controlled evaluation of other treatment factors. The facts remain that the results obtained by White are outstanding. Whether they are mainly related to the use of hormones or to the intensive care offered by Dr. White remains to be seen. For these reasons, and because the treatment is costly, the administration of sex hormones has not been recommended generally so far.

Close supervision of the patient cannot be urged more strongly. Starting in the second trimester the patient should be seen if possible at weekly intervals. Visits may be alternated between the family physician or internist and the obstetrician. Hospitalization should be made if poor control or pregnancy complications develop.

The timing of delivery may be most difficult to determine. Stillbirth can occur from the 35th week on, yet prematurity of the diabetic infant makes early delivery hazardous. The obstetrician usually decides on termination and will be guided by the size of the infant and the presence of complications. It has been recommended that Class A patients either be allowed to go to term or that they

be delivered at the 38th week. Pregnancies of Classes B and C are usually terminated at the 38th or 37th weeks respectively. The major difficulties are encountered in Classes D and beyond. It is highly desirable to evaluate patients in these categories at the end of the 35th week with planning of delivery shortly thereafter. In the early Classes vaginal delivery may be successful, whereas cesarean section is usually necessary in the advanced Classes.

The fall of insulin requirement that so often occurs immediately following delivery is abrupt, with the requirement declining to half or less of the predelivery dose. Over the next few days, there is a rise to the amount needed before pregnancy, or, in cases of transient diabetes, there may be no return of hyperglycemia. Hypoglycemia must be guarded against during this period.

At this point the report of Pederson in Denmark of the value of intensive diabetic control after the 32nd week should be mentioned.³⁶ In a series of patients classified as C through F, he obtained a fetal survival of 89 per cent without use of hormones and with cesarean section in only 17 per cent. This is equal to White's successful yield of 90 per cent in the same Classes of patients but with the use of hormone treatment in all and with cesarean section in 70 per cent. But Pederson hospitalized his patients at 32 weeks and kept the blood sugar below 170 mg. per cent. In a comparable group not hospitalized the successful yield was only 64 per cent. It would appear from his study that rigid diabetic control and close observation could substitute for hormonal therapy and cesarean section. But such an approach is often economically and socially difficult for the patient in this country. Still, constant supervision is essential, and can be carried out fairly satisfactorily with the scheme of weekly visits.

The Prognosis of Diabetes Developing in Pregnancy

Two studies have been reported recently dealing with the prognosis of diabetes pre-

sumed to have had onset during pregnancy. Hagbard followed 71 patients in Sweden who developed symptomatic diabetes during the course of pregnancy.³⁷ Of these, 37 (52 per cent) had remission of diabetes by the end of lactation. In the remainder (48 per cent) diabetes was permanent, and the patients were characterized by significantly lower ages and parity than those in the transient group. In further follow-up studies of 33 of those with transient diabetes, ten had acquired permanent diabetes by seven years. In this country O'Sullivan followed-up 146 patients of the Wilkerson study who had diabetic glucose tolerance curves but were asymptomatic during pregnancy.³⁸ Using the life-table method for the cumulative incidence of disease, he estimated that two-thirds had developed overt diabetes by five and one-half years post partum.

Summary

In summary, much new knowledge of diabetes in pregnancy has been gained. The effects of diabetes on pregnancy and pregnancy on diabetes have been more closely defined. Fetal survival is now the rule in the known diabetic pregnancy. On the other hand, pregnancy may serve to disclose the unknown diabetic, whether she has established diabetes or is still in the prediabetic phase. Despite intensive studies, the mechanisms of the interaction of pregnancy and diabetes remain unexplained. The factors of hormonal derangement, abnormal placenta metabolism, and unknown genetic traits as disturbing influences have been discussed. Nevertheless, even though the abnormal physiology is unclear, modern treatment is successful in most instances of diabetic pregnancy.

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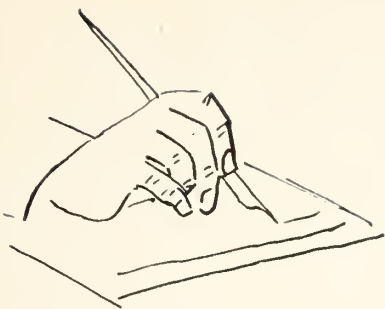
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Diabetes Detection Drive and the American Diabetes Association

The editors of the *Journal* wish to convey their thanks to Dr. D. G. Gill, the State Department of Health, and the Medical College of Alabama for relinquishing their regular space in the *Journal* so that we can devote this issue to diabetes mellitus.

The American Diabetes Association will conduct its annual Diabetes Detection Drive during the week of November 12-18 this year. The goal of this yearly drive is to find as many as possible of the over one million undetected diabetic men, women, and children in this country.

It is estimated that there are 2,750,000 diabetics in the United States today, and approximately 1,250,000 are unaware of their condition.

According to the American Diabetes Association, there are 5,125,000 other persons living today who are potential diabetics, which means that they will develop the disease sometime during their lives. About 72,000 persons become diabetic each year.

Of the total population of the United States, one out of every four persons—or 45 million persons—is believed to be a carrier of the hereditary disease.

Each year the American Diabetes Association has intensified the search for the unknown diabetic. The observance of Diabetes Week and the conduction of the Diabetic Detection Drive is the climax of one year's activities. But the job is never finished. Each month, each year, must see old efforts repeat-

Editorials

ed and new ideas put to use. New areas must be invaded; the old re-examined. The job can never be finished until a prevention of diabetes mellitus is discovered and universally applied.

This year's Diabetic Detection Drive will soon be history. Now, therefore, is the time to plan for 1962. New workers are needed, not so much to replace the "old" but to expand the program. Preventive medicine must reach as far as energies will permit. Conservation of human resources must know no bounds.

Many diabetics may likely spend another year without benefit of therapy because they were missed by this year's drive. In the future, they must at least be given an opportunity to learn or be tested or both.

National drives are commonplace. They tend to be treated by many with indifference. But the annual Diabetes Detection Drive has an advantage. It gives service and asks for no donations from the public.

The American Diabetes Association authorizes only county and state medical societies and affiliated ADA Associations to conduct official ADA detection drives. Materials are made available only to Committees on Diabetes of these organizations, their officers, or members as officially designated. For planning, publicizing, and executing a successful detection drive, these materials are invaluable. The medical profession always has control. With the ADA "formula," no organized medical group need fear. If the spark is present, the drive will progress. Any failure will be relative.

Guest Editorial....

DIABETES MELLITUS

This is written to commend you and your staff and to express my own deep appreciation for the allotment of an issue of the *Journal* to diabetes mellitus. This action indicates your full realization of the fact that patients with diabetes constitute a major health problem to physicians engaged in private practice and in public health work. This comprehensive contribution to better understanding of diabetes will benefit substantially those with the disease, and those who treat it. Particularly appropriate is your choice of time, for this issue will help to focus the attention of the physicians on the forthcoming Diabetes Detection Week.

Diabetes Detection Week was established by the American Diabetes Association 13 years ago. The program has grown steadily since Dr. Hugh Wilkerson's pilot study of Oxford, Massachusetts, revealed that for every known diabetic in town there was an additional person who had the disease but was unaware of it.

The significance of early detection of diabetes springs from the fact that the earlier the disease is diagnosed, the better it is treated, the more benign is its course; management is easier and the complications are far less frequent and severe. In certain quarters the viewpoint has been expressed that rigid control of diabetes is unnecessarily burdensome because degenerative sequelae are inevitable and uninfluenced by therapy. That this concept is erroneous has been shown by many long-term studies which consistently have revealed a clear-cut relationship between the degree of control and the incidences and severity of degenerative lesions. An example of this is the owners of the Elliott P. Joslin Victory Medals, each of whom has a 25-year history of diabetes and, after careful examination, is found entirely free of degenerative lesions.

Dr. Holcomb and Dr. Rogers of Oregon

have reported a survey of 100 consecutive patients each with a quarter of a century of diabetes mellitus. Twenty-seven per cent were entirely free of complications due to diabetes. Dr. Holcomb, throughout his career, has stoutly advocated strict control of diabetes.

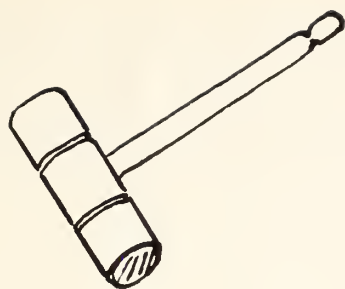
There is an appalling number of old diabetics who have a high incidence of complications. This reflects adversely upon their therapy of the past. Blindness, coronary disease, nephropathy, gangrene, infection, and renal damage might well have been greatly reduced had the medical profession brought to these patients the best possible care of their diabetes.

Since the work of Frederick Allen, diet has been recognized and accepted as the keystone to sound treatment of diabetes mellitus. The word "diet" with connotations of food restriction is poorly chosen in the case of diabetes. It would be better to designate the diet prescription not as a "diet" but as a measured food requirement.

The diabetic must be made to understand that his food intake must always be balanced with the supply of insulin available in his body. Whether he uses his endogenous insulin, takes oral hypoglycemic agents, or exogenous insulin is immaterial. The balance still must be maintained throughout every 24 hour period.

Insulin has permitted a greater liberalization of food intake, but it has not removed the need for strict attention to a proper diet. The physician must insist upon more accurate measurements of food stuffs than is obtained by the use of simple exchange lists. Only this approach can offer the very best care and therefore the best prevention of complications. He will have created the ultimate in doctor-patient relationship. His reward will be a task well done and many Victory Medals for his patients with diabetes mellitus.

Leon S. Smelo, M. D.
President,
Alabama Diabetes Association



President's Page



There is much current discussion about the need for personal and individual understanding between the doctor and his patient. This involves primarily a frank discussion regarding the facts and the nature of the present illness, with a thorough outline and explanation of the treatment procedures which are necessary. Oftentimes it is also important for the family to be aware of these matters. Perhaps no disease requires more careful consideration of the above factors than does diabetes mellitus. Perhaps, too, the treatment of no other disease is so rewarding as this one, when these factors are successfully developed.

This issue of the *Journal* contains a great deal of excellent information regarding the diagnosis, the care of the patient, and treatment of the disease. This is one practical way in which our monthly issues can bring help to our members. Through a study of these facts—our clinical studies, our laboratory facilities, our Department of Health, our nurses, social workers, therapy aides—all of these may be better united in the “team approach” which is so necessary for the return to successful living by the diabetic patient. This presentation of this information will be valuable to all of us in the case of this particular disease, but it should also remind us

that this same “team approach” is a valuable method when applied to any disease. The real purpose of medical effort against disease is prevention, detection, treatment, and restoration to normal ways of living.

As members of the State Medical Association you are asked to contribute your part in the field toward methods of prevention and detection of diabetes in your community. Support the work of the state committees. Do everything in your power to help educate our people to know more of what diabetes is, to be informed about its hereditary tendencies, and above all to realize how much the patients' own knowledge and that of his family can lead to a careful regimen of treatment and dietary control which will enable a very large percentage of the patients to live a long and useful life.

John W. Simpson, M. D.



around the state

CAMP SEALE HARRIS

"WONDERFUL!!"

"HAVING A BLAST."

"IT'S OK, BUT I'M HOMESICK."

"THE BEST CAMP THAT I'VE BEEN TO."

That's how four of the 96 children described their first day at Camp Seale Harris.

Through the eyes of charming Leslie Wilkinson (shown at right) of Jackson, Mississippi, this two-week camp for diabetic children is just about the most wonderful place on earth.

"Here at Camp Seale Harris I can have fun and enjoy the normal routine of camp life like kids at other camps."

Although this attractive young blonde camper particularly enjoys horseback riding and archery, she prefers the waterfront activities. Being a good swimmer, she especially likes the classes in water safety and water ballet.

Leslie is quick to point out that she has learned things other than sports at Camp Seale Harris. "When I first came here three years ago, I was frightened of a needle and didn't know anything about my diet."

"Here I've learned how to give myself insulin shots, how to take my urine-sugar test, how much I can eat, and how to play and take care of myself as a diabetic."

A typical day in Leslie's life, as well as the other 95 youngsters that attended the 14th session of the camp this summer, is as follows:

- 6:45 Reveille
- 7:15 Specimen check, blood-sugar test, administration of insulin
- 7:45 Flag ceremony
- 8:00 Breakfast—prescribed diet for each individual child
- 8:30 Cabin cleanup and inspection
- 9:20 Supervised sports



- 10:15 Morning nourishment and blood-sugar test
- 11:45 Specimen check
- 12:20 Lunch
- 1:00 Diet class
- 2:00 Rest Period
- 2:30 Afternoon blood-sugar test
- 2:45 Swim period
- 3:30 Supervised sports
- 5:30 Specimen check
- 5:55 Flag ceremony
- 6:00 Dinner
- 7:00 Organized games
- 8:00 Campfire
- 8:30 Specimen check, blood-test, night feeding
- 9:15 Taps

Camp Seale Harris was the first camp for diabetic children to be established in the South. It is named in honor of the late Doctor Seale Harris of Birmingham, who devoted much of his life to working with metabolic diseases. The camp is conducted by the Diabetic Clinic of Mobile at Scoutshire Woods near Citronelle, Alabama; and no child is denied the privilege of attending because of inability to pay.



Individual portions of food for each camper are carefully measured out by the dieticians.



Campers receive fresh fruit and juices at morning nourishment period.



Additional nourishment is given each camper in the afternoon.



Learning how to care for themselves is the primary purpose of Camp Seale Harris. Classes in diet instruction are held daily.



Fun is a major feature at Camp Seale Harris. The children enjoy the normal routine of camp life . . . swimming, horseback riding, rifle and archery practice, canoeing and sailing . . . while learning how to take care of themselves as diabetics.



TESTING FOR DIABETES

One out of every 140 patients who come into a physician's office may be an unknown diabetic. Because of this, we should make a year-round effort to find our unknown diabetics as early as possible. This can be done through proper testing. You should get a urine specimen two hours after a patient has eaten a full meal that contains plenty of starch and test the specimen for sugar. You can use one of these simple tests:

BENEDICT'S QUALITATIVE TEST. Place $2\frac{1}{2}$ cc of Benedict's Solution in a test tube. Add four drops of urine and shake well. Place the tube in boiling water for five minutes. Apply the color comparison chart to the liquid to determine the result. A cloudy green, brown, yellow, orange, or red color means sugar in the urine. If it remains a clear blue, this will mean no sugar and a negative result.

CLINITEST. Place five drops of urine in a test tube. Rinse the dropper and add ten drops of water. Next put in a Clinitest tablet. The mixture will boil; after it stops, wait 15 seconds. Then shake the tube and compare the color of the fluid with the color chart. Any shade of blue means a negative result. Any other color means that sugar is present.

TES-TAPE. Tear an inch and a half of tape from the dispenser, dip it into the specimen, remove and wait one minute. Negative: no color change. Positive: moistened end turns to some shade of green.

SUGAR TEST DENCO. Place Sugar Test Denco powder (a little less than a crushed

aspirin) on a piece of white paper. Place one drop of urine on the powder. If the color of the powder changes to black, the sample is positive—it contains a measurable amount of sugar. Disregard other color changes.

Caution: Blotting paper should not be used for the white sheets described above because it absorbs the urine before any reaction can take place.

CLINISTIX. Dip test end of Clinistix in urine (or moisten with a drop of urine, or pass through urine stream). Observe at exactly one minute. Negative: no blue color develops. Positive: moistened end turns blue.

DREYPAK. This is produced by the American Diabetes Association for use particularly in mass screening. The individual takes the strip home, dips it quickly into a specimen of urine, lets it dry, and returns it—by mail or otherwise. The tester adds one drop of glucose oxidase solution to the filter paper strip containing the dried urine specimen. After two minutes, if the filter paper turns any color between light green and dark blue, there is sugar in the urine.

diabetes week



NOVEMBER 12-18



be alert!...



be tested!



be sure!...

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

November 1961

No. 5

Strokes And Heart Attacks

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Dallas, Texas

A stroke has been defined as a focal neurological disorder of abrupt development due to a pathological process in the blood supply to the brain.¹ Such episodes are produced by thrombosis of the vessels in the brain or leading to the brain, hemorrhage into the brain, or embolism to the brain. Better methods of diagnosis, such as angiography of the vessels to the brain, have been a great stimulus to the study and therapy of atherosclerosis, partial obstruction, and thrombosis of cerebral vessels. This phase of the problem will be covered in later articles in this symposium this morning. The most common cause for embolism to the brain is a thrombosis arising within the heart itself from

which small emboli may break off and pass to peripheral arteries, about 50 per cent of which become cerebral emboli² producing some type of stroke.

Etiology

Almost every kind of heart disease can be associated with embolism. The commonest direct cause is chronic atrial fibrillation due to atherosclerotic or rheumatic heart disease. Non-contraction of the atrium with resultant stagnation within the appendage probably is a major factor in the deposition of a mural thrombus in the auricular appendage. However, the mechanism of this deposition is not definitely known and it is difficult to explain why in one case of auricular fibrillation thrombi will develop while in another it will be lacking. Embolism probably also occurs in paroxysmal auricular fibrillation or paroxysmal flutter and possibly in paroxysmal

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Presented at the First Annual Dixie Postgraduate Assembly in Birmingham on July 12, 1961.

auricular tachycardia. However, documentation of such emboli is not well established and, of course, atrial fibrillation due to any type of heart disease can lead to embolisms, examples of which are hypertension, congenital heart disease, thyrotoxic disease, syphilitic heart disease, etcetera. Most of these types of heart disease are associated with congestive failure and this is undoubtedly a contributing factor.

The frequency of mitral stenosis and auricular fibrillation as a cause of systemic emboli is shown by the fact that in 194 patients with systemic arterial emboli in rheumatic heart disease, Daily² found mitral lesions in 97 per cent, atrial fibrillation in 90 per cent, and either or both in 100 per cent. He also points out that 2.5 per cent to 4.0 per cent of patients with auricular fibrillation die suddenly and unexpectedly, at least a large percentage of which are due to cerebral embolism.

Myocardial infarction is the second most frequent source of cerebral emboli and may occur at any time the endocardial surface of the myocardium is affected by the infarction to such a degree as to produce a mural thrombosis from which minor fragments may embolize. In a report of 1000 consecutive autopsies,³ 12 of 41 myocardial infarctions, or 29 per cent, revealed associated cerebral vascular accidents. Cerebral infarct occurs in five to 15 per cent of various series of proven myocardial infarctions and in many cases the myocardial infarction is unsuspected, the presenting symptoms being of the cerebral embolus which overshadows the findings of the infarction.

Probably the third most common cause of cerebral embolism is subacute or acute bacterial endocarditis, non-bacterial fibroelastosis, and non-bacterial endocarditis. The embolization from bacterial endocarditis is, of course, septic. However, this is usually of such a low grade infection that the local emboli frequently do not produce abscess formation, although this can occur.

A fourth common cause has developed with the advent of mitral commissurotomy and

valvuloplasty. It has been stated that five to 10 per cent of cases who have cardiac surgery for acquired heart disease will develop cerebral emboli. In spite of all the means used to avoid this complication, cerebral embolism, along with congestive failure, remains the predominant cause of death in the post-operative period in surgery of the valves of the heart. Early in the development of open heart surgery, air embolism was a problem, but changes in technique have practically eliminated this factor.⁴

Other possible emboli, which would not necessarily arise within the heart, should be included in this discussion for the sake of completeness. These would include paradoxical embolism due to embolic material arising in the veins in the lower extremities or elsewhere, passing through a congenital defect to enter the arterial circulation, bypassing the pulmonary circulation. Mural thrombi deposited upon an ulcerative atheromata of the arch of the aorta or carotid arteries may break off, producing emboli. Occasionally, atheromatous material itself may extrude and be swept along to lodge in distal vessels. The pulmonary veins may be the source of thrombosis which could pass through the left side of the heart to reach the brain directly. This route is plainly exemplified by cerebral abscesses following pulmonary suppuration, embolism which follows lobectomy and pneumonectomy, and, of course the well-known occurrence of carcinoma of the lung metastatic to the brain. Surgery of the neck and thorax is occasionally the source for an embolus. Fat embolism is closely related to trauma and rarely enters into the stroke problem.

Other cardiac conditions which contribute to cerebral infarction are those conditions which would produce a shock-like syndrome, such as Adams-Stokes syndrome, cardiac arrests, including ventricular fibrillation and cardiac standstill, carotid sinus sensitivity with hypotension, and severe postural hypotension. Such conditions will produce diffuse brain damage, which, after approximately six to eight minutes of less than 20 per cent

of normal flow, is not compatible with normal recovery of the brain.⁵ It is also conceivable that should narrowing of the vessels to one portion of the brain be present at the time the shock develops, a localized impairment or stroke could easily be the outcome.

Diagnosis

The signs produced by cerebral embolism depend upon where the embolus lodges, the size of the area of infarction, whether the embolus propagates and blocks off additional arterial branches, how much blood leaks into the infarcted area, and various other factors. The actual diagnosis would depend upon (1) the suddenness with which the episode developed, this being the most rapid type in its onset; (2) the presence elsewhere of a possible etiological factor, such as auricular fibrillation, mitral stenosis, myocardial infarction, etc.; (3) the absence of a grossly bloody spinal fluid such as one would expect in hemorrhage, although there may occasionally be some hemorrhage into the cerebrospinal fluid and xanthochromic fluid in cerebral embolism; (4) and, finally, the differentiation between embolism and cerebral thrombosis, the latter coming on much more gradually, frequently in step-like manner and without the usual probable etiological factors, such as noted above.

Meyer⁵ has pointed out that adequate diagnosis and therapy depends upon adequate investigation of the patient at the time of the cerebral vascular accident. History is important in determining the onset, previous number of episodes, rapidity of the development of symptoms, past history of possible etiological factors, such as infarction of the myocardium, intermittent claudication and other factors suggesting arteriosclerosis, etc. Physical examination will be important in determining the general status of the patient, particularly regarding the presence or absence of signs of rheumatic heart disease (especially mitral stenosis), cardiac arrhythmias, and congestive failure. The neurological examination will help to localize the point

of obstruction caused by the embolus. Fundoscopic examination is important as evidence of intercranial pressure would contraindicate²⁷ or limit the performance of a lumbar puncture which is essential in this problem. Provided there is evidence of increased intracranial pressure, a very cautious lumbar puncture can still be performed, obtaining only a small amount of fluid for cell count and determination of spinal fluid pressure through a tiny needle.

X-ray of the chest will be helpful in the diagnosis of mitral stenosis, lung abscess, or lung tumor, all of which could be the source of cerebral problems. X-rays of the cervical spine will occasionally reveal marked spurring compressing the arteries to the brain. Skull X-rays will eliminate injuries to the skull and occasionally give some evidence regarding brain tumor by displacement of the pineal body.

An electrocardiogram should be performed in all strokes for frequently strokes obscure the underlying myocardial infarction which has produced the embolus which brought on the general problem. Electroencephalogram will help to localize the lesion, particularly when the diagnosis is in doubt. Routine laboratory work, plus blood sugar, blood urea nitrogen, and cholesterol are necessary to evaluate the problem completely. Ophthalmic pressures are sometimes helpful in diagnosing internal carotid artery obstructions. The pressure necessary to occlude the ophthalmic arteries is markedly reduced if the carotid on that side is obstructed.

Finally, an angiogram of the carotid and vertebral vessels will localize more specifically than any other means the exact area of obstruction. If this obstruction should happen to be in an accessible area it can be removed surgically.

Treatment

Treatment of cerebral embolism may be divided into two phases: First, the treatment of the actual acute attack and, second, the

determination of etiological factor and the remedying future emboli, if this is possible.

The immediate care of the patient would be no different than the ordinary care of any patient with cerebral vascular accident; this would include supportive care, oxygen, maintaining an adequate airway, antibiotics to control pulmonary infection, parenteral feedings when necessary, catheterization of the urinary bladder when needed, control of bowel habits, and rehabilitation and physiotherapy.

This phase of therapy would also include those rare instances when an embolus should happen to obstruct one of the carotid vessels in such an area as to be surgically removable. If this can be proved by angiocardiology, immediate surgery is indicated.^{6, 26}

Aside from these measures, an attempt to prevent a recurrence of the embolus should be made, if possible. This would depend upon the etiological factor present. In the presence of auricular fibrillation, three possible approaches to the problem are available. Wright⁷ strongly advocates the early use of anticoagulants, but in view of the reports in animals of an increase in the degree of hemorrhage in hemorrhagic infarction^{8, 9} and since many cerebral emboli do produce hemorrhagic infarcts,^{10, 11} he would advocate waiting 24 to 36 hours after the embolus occurs. The use of anticoagulant therapy is to be avoided if the usual contraindications for anticoagulant therapy are present, if the cerebrospinal fluid is xanthochromic, or if the blood pressure is significantly elevated.

Wills¹² has reviewed the cases at New York Hospital. 53 cases were treated without anticoagulant therapy and mortality rate was 25 per cent whereas 34 were treated with anticoagulants and there was a 6 per cent mortality rate.

Carter¹³ has treated a small number of cases with anticoagulants shortly after the diagnosis of cerebral embolism. The treated group revealed a mortality rate of 24 per cent as opposed to 54 per cent mortality in those

not treated. Seven cases died in the treated group and were autopsied. There was no increase in cerebral hemorrhage in these seven cases.

McDevitt¹⁴ has treated 47 patients with rheumatic heart disease without anticoagulants for a total of 1437 patient months, during which period she noted 64 cerebral emboli, 33 if the first episode is excluded, while on anticoagulant therapy for 1315 patient months there were ten cerebrovascular embolic phenomena, five of which occurred when the prothrombin time was greater than 25 seconds. She obtained somewhat similar results in patients with arteriosclerotic and/or hypertensive disease in that without anticoagulant therapy for 619 patient months there were 30 cerebrovascular accidents, 16 excluding the first episode, while on anticoagulant therapy for 432 patient months there were three cerebrovascular accidents, all of which occurred when the prothrombin time was less than 25 seconds, considered by her as an inadequate therapeutic level. From these statistical studies, it would seem that anticoagulant therapy is worthwhile in any patient who has had a cerebrovascular embolus.

On the other hand, Fisher¹⁵ in an interim report from a national cooperative study which was well controlled, found, "Long term anticoagulant therapy does not appear to reduce mortality in occlusive cardiovascular disease and indeed is associated with an increased risk due to hemorrhagic complications." His series included 182 controls and 195 treated patients. However, there were only 30 patients with cerebral embolus, equally divided between treated and untreated and there was an unusually high mortality rate of 17 of 30, also about equally divided between these two groups.

The Veterans Administration cooperative study of atherosclerosis¹⁶ dealing with 99 cases, concludes that so far long term anticoagulant therapy does not appear to be a practical or effective method of treatment for the majority of patients with cardiovascular disease caused by atherosclerosis.

Apparently, the final answer to this type of therapy has not yet been established.

Our second approach to the problem of auricular fibrillation would be an attempt to convert to a normal sinus rhythm. Friedberg¹⁷ recommends at least one vigorous attempt to convert all auricular fibrillation cases. It is true that occasional arterial emboli occur after conversion. He feels, however, that this more often occurs with recurrence of auricular fibrillation rather than at the time of conversion. It is certainly true that if the patients are not converted, frequent emboli will occur particularly in the presence of mitral stenosis and auricular fibrillation. Friedberg quotes 256 cases from the literature converted with quinidine to a normal sinus rhythm without evidence of embolization.

If previous embolization has occurred, it would seem logical to use anticoagulant therapy for two or three weeks prior to any attempt to convert and to continue it for three or four weeks after conversion. Conversion is usually accomplished with quinidine, using increasing doses beginning with three grains every two hours for five doses the first day, six grains every two hours for five doses the second day, and building up either to the tolerance of the patient or until conversion occurs. Conversion should be controlled by electrocardiographic control and should marked widening of the QRS complex occur, ventricular arrhythmias develop, or severe nausea and vomiting develop, the attempt to convert may have to be discontinued.

The presence of mitral stenosis, itself being a possible source of embolization, should be corrected surgically if significant degree of stenosis is present. In fact, embolization¹⁸ has been given as one of the indications for operation. If embolization has already developed, anticoagulant therapy has been recommended preoperatively. This should be carried out over a period of three to four weeks, but discontinued prior to operation with adequate return of prothrombin time, bleeding time, and clotting time to normal prior to operation.

However, Storm¹⁹ and others¹⁴ have operated upon patients under Dicumarol therapy with no emboli and no increase in mortality or surgical accidents due to hemorrhage.

Bailey¹⁸ and others have recommended the use of isolation of the carotid artery with tapes around the artery to temporarily occlude the carotids while the manipulation of the mitral valve is being carried out. However, this procedure or external compression of the carotids, has been unsuccessful in completely preventing embolic phenomena.

A certain percentage of patients will develop auricular fibrillation post-operatively. In one series,²⁰ 45 per cent of 74 patients had this complication, which has been said to be the most common complication of mitral commissurotomy. Of this group, 30 per cent reverted spontaneously between the first and sixth days; another 47 per cent reverted to sinus rhythm on quinidine therapy; and 23 per cent failed to convert. Arterial embolism occurs in about six to 13 per cent of post-operative mitral commissurotomies. Wang²¹ has studied one hundred cases of mitral stenosis with documented pre-operative embolization. He found that pre-operative anticoagulant therapy reduced the incidence of embolization from 60 per cent to 16 per cent. The most favorable results were obtained when good splitting of the valve was obtained, the absence of atrial clots was noted, and an appreciable lapse of time had occurred since the last embolus. Kellog²² points out that in a series of 149 cases there were 13 deaths, four of which were due to cerebral emboli; five more had cerebral emboli but survived. He also points out that twelve patients had embolization for the first time post-operatively. In another series of 130 cases,²³ there were 48 pre-operative embolizations, 12 operative embolizations, and five post-operative embolizations. These authors point out that only three of the twelve patients who had embolizations at the time of operation had had previous emboli.

Kittle and associates²⁴ in 254 cases of mitral valvulotomy noted that the use of quinidine

and digitalis, pre-operatively, reduced the post-operative development of auricular fibrillation to 16 per cent, whereas no medication, digitalis alone, or quinidine alone, produced a post-operative auricular fibrillation rate of approximately 35 per cent. They conclude that a combination of digitalis plus quinidine prophylactically pre- and post-operatively is the most effective method to prevent post-operative development of auricular fibrillation.

In the presence of myocardial infarction, Wright²⁵ and associates have written extensively regarding the advantage of anticoagulant therapy in the prevention of embolization. In my opinion the presence of significant myocardial infarction with any of its complications is a strong indication for anticoagulant therapy for this reason, as well as many others.

Other types of heart disease should, of course, be treated according to the etiology. For example, thyrotoxicosis is best treated with either surgery, radioactive iodine, or thyroid suppressing drugs; luetic heart disease with penicillin; and beri-beri with vitamin B.

Summary

In any stroke of sudden onset, a diagnosis of cerebral embolism should be entertained and established, if possible. If established, the etiological cause for the embolus should be determined and appropriate treatment for that etiological factor should be carried out. The most frequent causes of cerebral embolization are auricular fibrillation, mitral stenosis, myocardial infarction, endocarditis, and cardiac surgery. In the presence of these diseases, sudden stroke would have to be considered embolization unless strong evidence against this diagnosis could be established.

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Principles Of Treatment Of Facial Injuries

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With the widespread use of automobiles, facial injuries have become increasingly common. They tend to follow certain definite patterns as to the method of occurrence and of anatomical configuration. Statistics show that the passenger beside the driver stands about nine times the chance of severe facial injury as does the driver.

In cases of severe automobile accident, the passenger in the front seat is subjected to rapid deceleration. In consequence, he becomes something in the nature of a missile and is projected forward with great force striking the windshield, corner posts, or the dashboard with its many knobs and dials. This usually results in severe lacerations and often fracture displacement of the supporting structures.

The patient is often presented to the surgeon with severe lacerations and fracture displacement of the bones of the face. Oftentimes his condition is precarious because of blood loss and blockage of the airway. These conditions demand immediate attention in the nature of ligation of bleeding points and in prompt and early tracheostomy. This is particularly true when there are intracranial injuries.

One might say that the principles involved in treating severe facial injuries are briefly:

1. Arrest of hemorrhage.
2. Maintenance of airway.
3. Preservation of eyesight.
4. Restoration of normal relationship of soft tissue and bony frame work.

When the patient is first seen, one is struck, most often, by the soft tissue damage. This damage may be classified as to type, namely:

1. Clean incised wound.
2. Contaminated incised and contused wound.
3. Avulsed tissue.
4. Abrasions.

Each of these conditions must be considered in turn. Fortunately clean incised wounds are encountered most frequently. The principles in treatment involved are careful conservative debridement and copious irrigation. Fixed points of the face, namely, the corners of the mouth, the ala of the nose, and the canthi of the eye are carefully indentified. These points are accurately restored and the wound closed in layers with fine white silk, subcutaneously. The skin is then closed with a fine non capillary suture such as five zero nylon. Sutures must be so placed as to avoid inversion of the skin edges. Fig. 1 & 2. The anesthesia most often used is local infiltra-

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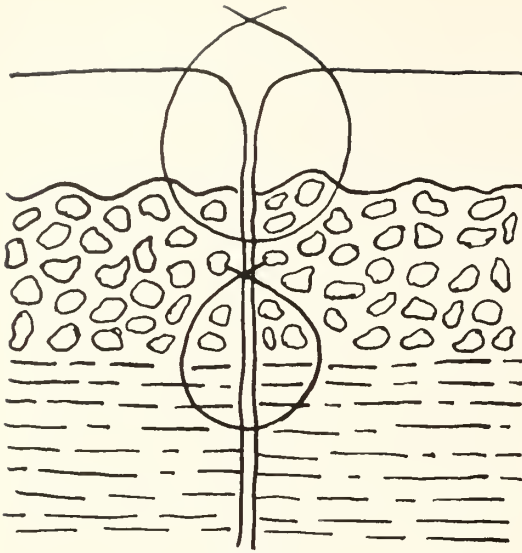


Figure 1

Wrong—Inversion of skin edges.

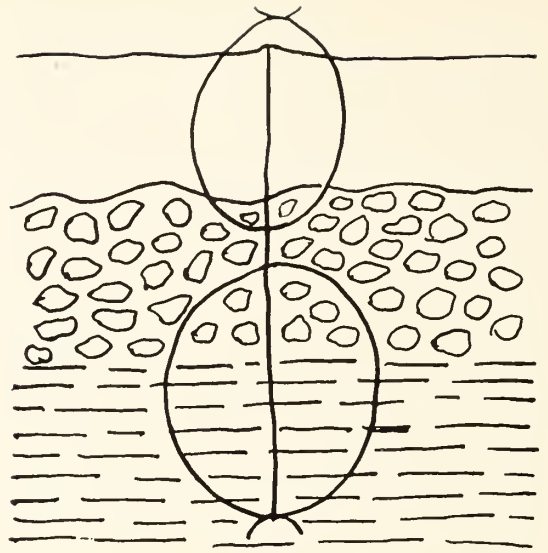


Figure 2

Right—Eversion of edges. Sutures close to skin 90° angle and through all skin components.

tion or nerve block. Xylocaine one per cent with adrenalin is particularly efficacious. It is often necessary to correct the blood loss by transfusion. Airway or preservation of eyesight in uncomplicated lacerations is seldom a problem. Either a booster dose of tetanus toxoid or five thousand units of tetanus antitoxin is given. If the latter is given, it is often well to give the primary dose of toxoid at the same time. The second dose of toxoid should be given in about three weeks.

Contaminated wounds require much the same treatment. Debridement, while conservative is generally more complete. Extensive irrigation and manual removal of foreign bodies is of prime importance. Closure of the muscle is carried out with fine chromic cat gut. The subcutaneous tissue is closed with a subcuticular stainless steel (size 32) running suture which may be removed simply by pulling on one end. Here again, toxoid or antitetanus serum in adequate doses are given. The wide experience of many surgeons has shown that any dose less than five thousands units A.T.S. is inadequate. In all cases of soft tissue injury, an adequate, firm, but not pressure, dressing is applied. In many cases, there is definite tissue loss. These wounds should be carefully closed as far as possible without tension. Local flaps are dangerous and not indicated. It is far better

to cover the defect with a split thickness skin graft or suture mucosa to skin. After complete healing and contracture has taken place, the scar and the skin grafted area are removed and closure effected by local flaps or pedicle tissue.

Abrasions with consequent tattooing are often seen, particularly when the victim is thrown from the automobile striking the pavement or road dirt. These wounds require very special treatment to avoid permanent tattooing. They should be irrigated thoroughly and the gross dirt removed by scrubbing with a suitable soap containing hexachlorophene. Often, after this treatment, the wound appears clean. However, there are usually small patches of dirt which become apparent after wound healing. To prevent this, the abrasions should be scrubbed with moderately coarse sandpaper and dressed like the donor site of a skin graft.

In the case of any deep injury to the soft tissue of the face certain accessory structure may be damaged. One such structure is the parotid duct. Lacerations at right angles to a line from the tragus of the ears to the center of the philtrum of the upper lip often cut this structure. Usually, it can be located easily and an end to end anastomosis over a ureteral catheter carried out. If this is not



Figure 3

Usual fracture in molar region and opposite mental foramen.

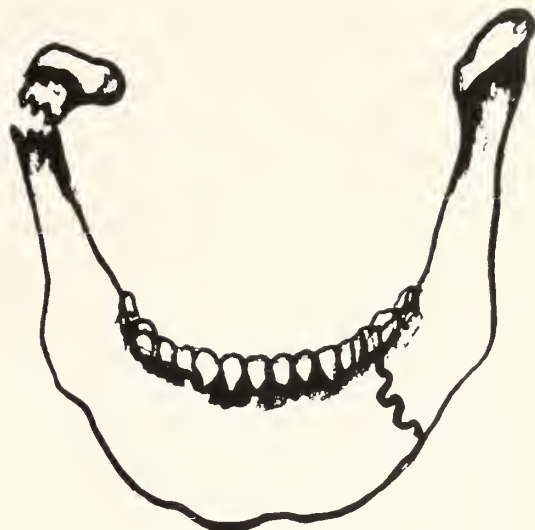


Figure 4

Common fracture through one molar region and opposite condyle.

feasible, the proximal end of the duct should be tied. Atrophy without fistula usually occurs. Injuries to the facial nerve may also occur. Repair in the area of arborization is impossible. However, should a main branch be damaged, a search for the ends should be made and direct suture carried out. This sometimes involves locating the main branch of the facial nerve and tracing out its components.

Damage to the bones of the face is often associated with soft tissue injury. The mandible is frequently involved. Since this structure is virtually a bony ring, there are almost invariably two fracture sites. Fig. 3 and 4. The most frequent condition is that of one fracture at the mental foramen of one side and the first or second molar tooth on the other. The second most common condition involves the mental foramen and the opposite condyle. Various combinations can occur. However, the fracture of the condyle is often missed because of poor position of the patient on the X-ray film. This contingency must be considered when the jaw shifts to one side during the process of opening and closing of the mouth. The shift will invariably be towards the affected side. The treatment involves the reduction and immobilization of the fragments against the upper jaw by the use of Stouts'¹ continuous wire

loops and rubber bands. Fractures of the condyle alone may be ignored except when motion is blocked. If the shift toward the affected side after healing is too great, a temporary guide plane may be useful in assisting the patient to re-educate the muscles of mastication. These planes are simple devices fastened on the upper and lower teeth on one side. There is a vertical component on each so that they stay intermeshed like the blades of scissors thus preventing lateral shift.

The question of teeth in the line of fracture has been a controversial one over many years. It is now felt that teeth in the line of fracture should be extracted unless they are vital to maintenance of the position of the bones. After union, the devitalized tooth should be removed. The classic example of the necessity for preserving the tooth is in the case of a second or third molar which prevents the posterior fragment from displacing upwardly. Sir Harold Gilles² in 1940 made the statement that he doubted that any method of controlling the posterior edentulous fragment would be devised during World War II. Subsequent events proved that statement to be true. Various bite blocks and splints with attachments to hold the ramus in its normal position have been discouraging. Open reduction with wiring of

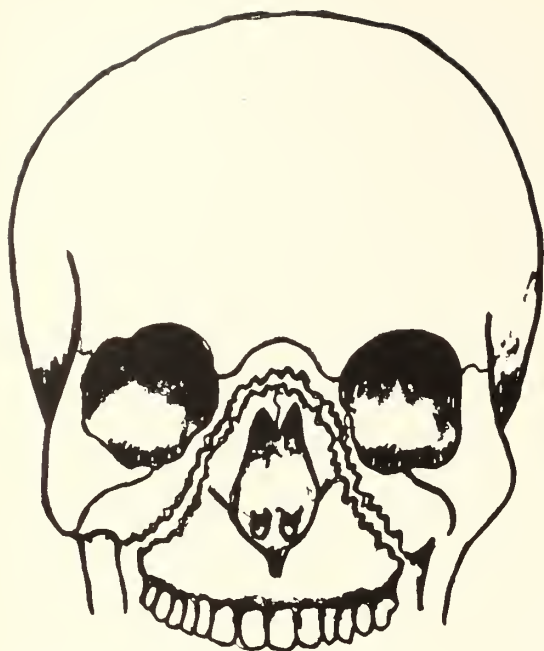


Figure 5

Maxillary separation.

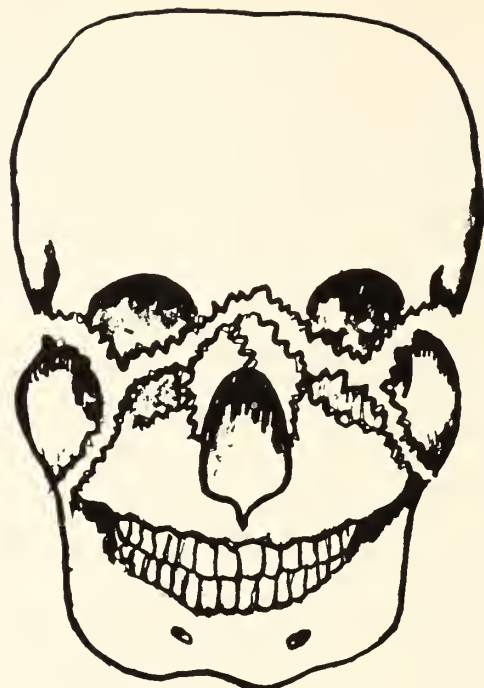


Figure 6

Complete facial fracture.

the lower border of the mandible has been more effective. External pin fixation is inadequate and often misapplied. Indiscriminate use of foreign bodies for fixation is dangerous. Because the close adherence of the muco-periosteum these fractures must be considered compound.

Violence to the middle third of the face may be of a frontal or lateral nature. When frontal in character, "ripples of violence",³ usually occur. The locations of these ripples are determined by the strength of the bone at given points. The first "ripple" of moderate degree is absorbed by the nose resulting in the typical nasal fracture. Greater force "second ripple" drives the nasal bones into the face like a wedge. The maxilla is separated from the skull and malar components. The lateral fracture lines pass through the infraorbital foramen and the maxillary components of the malar compound. (Fig. V.) Consequently the central or maxillary portion of the face is freely floating. More severe violence forces the maxilla backward causing the third "ripple". The zygomatic process is fractured and these structures lie free. It is as though the center of the face

is the site of an explosion. Examination gives one the feeling that he is dealing with a "bag of bones". (Fig. VI.)

It is in this group of fractures that the most serious complications arise. Usually nasal fractures can be elevated, and properly shaped with the handle of a knife. Gentle packing with vaseline gauze will usually stop hemorrhage and act as a splint.

Fractures involving the center third of the face (second ripple of violence) are prone to dangerous complications. Airway is often obstructed and tracheostomy is necessary. If time is sufficient, a transverse incision about 3 cm long is made over the third or fourth rings of the trachea and a cannula inserted. Unless the situation is desperate the added few minutes required is well spent. Fixation is simple and can be carried out without expensive and intricate apparatus. In patients with adequate dentition, one may use the opposite jaw as a splint. Continuous wire loops with rubber band traction to bring the teeth in occlusion gradually will suffice. If the maxilla is free floating, it can be brought into functional position with the mandible. The entire structure may then be



Figure 7

Depressed fracture of zygoma impinging on coronoid.

brought in proper relationship with the base of the skull by means of a light head cap of plaster and a broad rubber chin strap to pull sharply upward closing the separation of the facial bones. At times dentition is poor and a splint may be required. The dental colleague is of greatest help in planning these devices. In the case of the edentulous patient his dentures may be circumferentially wired to the lower jaw and to the upper jaw by piercing the alveolar process and directly fastening them to the bone. When dentures are not available, the skillful dentist can often take impressions of the alveolar ridges and by sectioning his models, construct splints which when wired to the mandible and maxilla restore normal occlusion.

Lateral violence to the face usually involves the malar compound or the arch. (Fig. VII.) The compound as such is a strong bony tripod that when fractured is displaced medially carrying the lateral floor of the orbit with it. Since the fracture line extends through the infraorbital foramen, one notices a flattening of the cheek eminence. Subjectively the patient almost always notes a triangle of anesthesia on the upper lip and cheek

and often double vision. This fracture is best treated by exposing the area of the maxilla above the canine tooth. A fracture line into the antrum is usually seen. It should be enlarged and all clot and debris removed. The malar tripod is then properly placed and held by iodoform packing for about two weeks. The end of the packing is brought out through the buccal incision or through an intranasal window. On removal, prompt closure of the openings occur. Attempts to reduce this fracture through a temporal approach is worse than useless. Such attempts only rotate the fragment and do not elevate the floor of the orbit. Consequently there is no correction of double vision.

Fracture of the zygomatic arch is not common. When this occurs, free movement of the mandible is often impaired. X-rays of the arch show this depressed fragment impinging on the coronoid process of the mandible. Reduction of the fragment by way of a vertical incision in the hair line is the first step. The fascia of the temporal muscle is incised along its fasculae and a heavy periosteal elevator inserted behind the arch. (Fig. VII.) A folded towel is used as a fulcrum and the arch is levered into place. In very rare instances an open reduction with wiring is required.

Summary: The principles of care in case of facial injury are:

1. Control of hemorrhage and replacement of blood loss.
2. Maintenance of adequate airway by prompt and early tracheostomy if necessary.
3. Preservation of eyesight by gentle and careful manipulation of the structures.
4. Restoration of proper soft tissue and bony relationship by careful suture uniting the fixed soft tissue points and gentle gradual restoration of the bony structures.

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The Cardiac Worker In Industry

NEILL K. WEAVER, M. D., F. A. C. P.

Baton Rouge, Louisiana

"What to do about the worker with cardiac disability—recommend return-to-work or disability retirement?" This question arises again and again as a real problem for the busy practitioner. He knows of the great progress made in recent years with respect to rehabilitation of workers stricken by heart disease. Changing attitudes about heart disease—from resignation and pessimism to encouragement and optimism—have done much to eliminate the doubts and fears which formerly beset patient, family, employer, fellow-workers, and physicians faced with a work vs. retirement situation. Yet the course leading to rehabilitation of the cardiac is not easy. Socioeconomic and legal barriers, as well as medical uncertainties, exist as deterrents.

For the practicing physician who must make a recommendation of work or retirement for his cardiac patient, the development of knowledge and skills which will enable him to make the decision confidently and soundly will be of inestimable value.

A review of experience with cardiac rehabilitation in a segment of the refining and petrochemical industry may be of interest. An analysis of cardiac disabilities, and a follow-up study of workers with heart disease will be presented. Techniques of demonstrated value in returning the cardiac to a suitable assignment, as well as pitfalls to avoid in striving for effective placement, will be described.

METHOD. For the refinery worker developing significant heart disease, medical evaluation is carried out by the conventional techniques of cardiologic practice. These are supplemented by observations needed to ascertain his abilities or capacities in relation

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Presented at the First Dixie Postgraduate Assembly, Birmingham, Alabama, July 13, 1961.

to the job. Placement is achieved by matching the capacities of the individual with the demands of the job. Careful follow-up insures suitability of the assignment.

Studies were first carried out at the Baton Rouge refinery with an average 6,500 workers for the period under consideration.^{1, 2} The analysis of cardiac workers was later extended to other manufacturing units of the company, with a total population of nearly 15,000 employees.³ Data from the expanded studies form the basis for the present report.

RESULTS. Table 1 presents an analysis of 554 absences from work due to heart disease. Most (over 87 per cent) were due to arteriosclerotic heart disease. Acute myocardial infarction and coronary insufficiency each accounted for about 38 per cent of the total absences, and episodes of congestive failure for 12 per cent. In contrast, rheumatic and hypertensive etiologies each caused only four per cent of absences. Miscellaneous forms of heart disease—arrhythmias, cor pulmonale, and congenital defects—accounted for five per cent. The outcome of the absences for each diagnostic group is shown as per cent ending in death, disability retirement, and return-to-work. The mortality rate for the group of acute infarctions was 32 per cent; 16 per cent of infarcts resulted in disability retirement, and 52 per cent returned to the job—or, expressed as per cent of those surviving, 77 per cent continued at work. Of the other categories, the per cent returning to work varied from 66 per cent for absences due to rheumatic heart disease (in failure) to 83 per cent returning after episodes of coronary insufficiency.

TABLE 1

ANALYSIS OF 554 ABSENCES DUE TO HEART DISEASE

	No. Absences	% Death	% Disability Retirement	% Return to Work
Acute Infarction	213	32	16	52
Coronary Insufficiency	204	1	16	83
ASHD—Failure	66	11	24	65
Rheumatic H. D.	22	10	24	66
Hypertensive H. D.	22	13	17	70
Miscellaneous H. D.	27	8	22	70

Table 2 shows the average duration of disability absences due to arteriosclerotic heart disease: 16 weeks for acute infarction, five weeks for coronary insufficiency, and seven weeks for congestive failure.

TABLE 2

AVERAGE DURATION OF A. S. H. D. DISABILITIES

Acute Infarcts.....	16 weeks
Coronary Insufficiency	5 weeks
Congestive Failure	7 weeks

What about the job status of those returning to work? Table 3 reveals that 40 per cent continued at the same assignment; 55 per cent resumed the previous job with modification, and five per cent needed reassignment to a new job. Less than a third of salaried workers required change in job, as compared to 68 per cent of the wage earners (Table 4). However, it is noteworthy that even for the least skilled worker category, the unskilled wage earner, only seven per cent needed to learn a new job.

TABLE 3

STATUS ON RESUMING WORK

Previous Job.....	40%
Previous Job with Modification	55%
New Job	5%

TABLE 4

JOB TYPE VS. STATUS ON RESUMING WORK

	Salaried	Wage Earner
Previous Job.....	69%	32%
Previous Job with Modification	30%	62%
New Job.....	1%	6%

Figure 1 provides follow-up information on 383 industrial workers with established arteriosclerotic heart disease: 219 with infarction, 126 with angina or coronary insufficiency, and 38 with congestive failure. The cases were collected during the years 1952 to 1956 by a study of absence records for the whole population of nearly 15,000. Two fol-

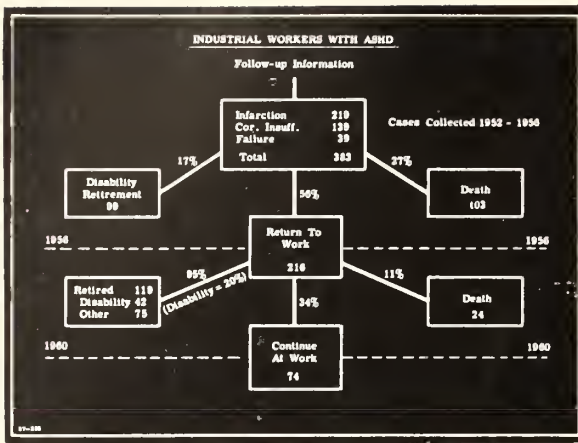


FIGURE 1

low-up periods are shown. The first indicates worker status at the end of 1956, an observation period averaging two years from entry into the study. The second follow-up period is four years later, giving the status at the end of 1960 of those patients continuing at work in 1957.⁴ Over all, 216 workers (56 per cent) of the original group continued at work in 1957, and 74 were still at work in 1960. During the period 1957-1960, 75 stopped work for non-medical reasons, more than were terminated by death and medical retirement combined. In fact, when deaths and disability retirements during the initial absence are excluded from the study, the six year mortality rate and disability retirement rate for patients at work are 17 per cent and 26 per cent respectively. Expressed another way, for workers with established arteriosclerotic heart disease selectively placed in a suitable assignment, only nine per cent discontinued work yearly due to death and disability. The total period at work accumulated by the 383 workers with arteriosclerotic heart disease, calculated from the recognized onset of disease to termination or the end of 1960, exceeds 1,000 man-years.

DISCUSSION. A number of factors make up a favorable "environment" for cardiac rehabilitation. First, the physician must sincerely and conscientiously do what is medically right for the patient. He must be wary of well intended but prejudiced advice from the patient's family and friends; medical de-

cisions must be based on medical facts, not social and economic influences. An enlightened employer, who appreciates the background and experience of the cardiac and values him as a person and a worker, has much to do with a successful rehabilitation program. The employer deserves adequate protection against low productivity and unjustified compensation claims. The worker-patient should have the necessary education, experience, ability and motivation to work effectively. A union willing to cooperate in placement moves for the handicapped, and understanding (not just sympathetic) fellow-workers, family and friends, all have roles to play in the rehabilitation program.

Information derived from the experimental laboratory—the force platform, oxygen consumption measurements, even "space age" developments in miniaturization of instruments and telemetry which enable the cardiac to be monitored at work—are adding to our store of knowledge, but there is no substitute for the conventional practices of cardiology in the evaluation of the cardiac. The history, physical examination, laboratory, electrocardiogram, X-ray, testing of other organ systems (pulmonary function, for example) are basic steps. Activity testing—observation of the patient walking, ascending a stairway, lifting, carrying, etc. often help in the determination of capacities needed for a job. It is desirable to spell out the individual's capacities as specifically as possible, preferably in writing, to avoid future misunderstandings. Standards or criteria can be set as general requirements for return to work (Figure 2 following myocardial infarction, Figure 3 following an episode of mild congestive failure), but each case must be handled individually. The cardiac patient is then ready for placement (usually a "team" effort involving physician, employment or vocational counsellor, supervisor, etc.—normally, the supervisor should announce the decision), and controlled trial at work. Careful follow-up, by physician from the medical point of view, by supervision with respect to productivity and adjustment on the job, will insure adequacy of the assignment.

CARDIAC WORKER

FIGURE 2

CRITERIA FOR RETURN TO WORK FOLLOWING MYOCARDIAL INFARCTION

1. Sedimentation rate, WBC, differential, serum amylase, etc. must be essentially normal.
2. Electrocardiograms must be stable (serial tracings).
3. Failure and angina, if present, must be adequately controlled for the work intended.
4. Home activity must be equal to that required by initial job assignment.

The 1,000 man-years at work achieved by the refinery employees after the onset of serious or potentially serious arteriosclerotic heart disease are a notable achievement. As has frequently been pointed out, this form of heart disease strikes the experienced worker. The productivity carried out by a work force equivalent to 100 seasoned craftsmen for a ten year period represents a valuable asset for the company. Through rehabilitation, there were 1,000 years of worker contribution to, rather than withdrawal from, pension funds, insurance and benefit plans. Most important, the cardiac workers gained 1,000 years of socioeconomic independence, with resultant higher standard of living for themselves, and their dependents, plus the many intangible rewards that can only come from involvement in a gainful vocation.

SUMMARY. Experience with the rehabilitation of workers developing cardiac disabilities in refining and petrochemical manufacturing plants is reviewed. Of 554 disability absences due to heart disease, 87 per cent resulted from arteriosclerotic heart disease (38 per cent infarction, 37 per cent coronary insufficiency, and 12 per cent congestive failure), four per cent were due to hypertensive heart disease, four per cent were of rheumatic origin, and five per cent were due to other etiologic conditions. Of the absences due to acute myocardial infarction, 32 per cent terminated in death, 16 per cent in disability retirement, and 52 per cent in return-to-work. Similar analyses of absences in the other diagnostic groups revealed a range in the per cent returning to work from 65 per

FIGURE 3

CRITERIA FOR RETURN TO WORK AFTER EPISODE OF MILD CONGESTIVE FAILURE

1. Return to prefailure weight despite ambulatory activity.
2. Absence of pretibial edema, tender enlargement of liver, and basal rales for at least a week.
3. Resting pulse below 90. Return of pulse to pre-exercise level in 3 minutes or less.

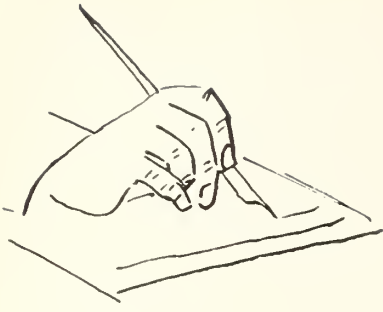
cent for arteriosclerotic heart disease with failure to 83 per cent for coronary insufficiency. For those resuming work, 95 per cent returned to the same job or to the previous job with modification, five per cent needing reassignment.

Follow-up of a group of 383 workers with established arteriosclerotic heart disease revealed 216 at work after two years, and 74 at work after six years. However, the annual rates for discontinuation of work due to death and disability retirement were only three per cent and six per cent respectively. The accumulated work history for the entire group, measured from onset of disease to termination or the end of 1960, amounted to over 1,000 man-years.

Factors in the physician-cardiac patient-employer relationship which enhance opportunities for effective placement and rehabilitation are discussed.

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Editorials

SOUTH AVERAGES FEWER ILLNESSES

The average person in the South today has fewer acute illnesses than residents of any other region of the country, according to the Health Insurance Institute.

Reporting on an analysis of the data compiled by the U. S. Public Health Service on 368 million acute cases, the Institute said the average Southerner had 1.9 acute conditions per year, compared to 2.1 conditions per person in the Midwest, 2.2 per person in the Northeast, and 2.5 per person in the West.

These acute conditions, with certain exceptions, were defined as those which last less than three months and which involve either medical attention or restricted activity.

For the nation as a whole, respiratory ailments, including the common cold, were the most frequently reported acute health conditions, accounting for 215 million illnesses, said the Institute. There were nearly 50 million injuries, 44 million cases of infectious and parasitic diseases (including viruses), 20 million digestive system conditions, and 39 million assorted other acute health conditions.

The average person who lives in the West not only had the highest rate of acute illness per person per year but also was ahead of his typical regional counterparts in days of restricted activity and bed disability from acute illnesses, piling up 10.5 days of restricted activity per year and 4.4 days of bed confinement, said the Institute.

Although the average Southerner reported fewer acute conditions, he did not have the least amount of limited activity.

This honor fell to the average person in the Midwest, who had 7.2 days of restricted activity per year and 3.2 days of bed confinement. The average Southerner had 8.6 days of restricted activity and 3.7 days confined to bed. For the average person in the Northeast, the figures were 8.7 days of restricted activity and 3.6 days of bed confinement.

Acute health conditions were responsible for 1.4 billion days of restricted activity and 616 million days of bed confinement on a national scale.

The institute reported a huge regional difference in the number of cases of virus and suggested that this might be due to the greater usage of the term in certain sections. Of the 20.4 million cases of "the virus" reported, a total of 17.8 million came in the Northeast and South.

PATIENT LOAD

The National Disease and Therapeutic Index, a private research organization, has issued a report of its study of internal medicine, cardiology, and gastroenterology.

The report, the first of a series on different branches of private medical practice, was based on data collected from patient contacts

with 11,400 internists, 1,000 cardiologists, and 400 gastroenterologists during the full year of 1960.

The report shows that internists, cardiologists and gastroenterologists, combined, saw an average of 15.5 patients per work day in 1960. General practitioners averaged almost seven more patients per work day (22.1).

The Northeast section of the country had the highest internist/cardiologist/gastroenterologist patient load of 16.5 and the lowest general practitioner patient load (19.7).

On the other hand, the general practitioner had a regional range from 19.7 in the Northeast to 23.5 in the South.

With regard to the particular specialties, internists averaged 15.5 patients per work day; cardiologists, 16.0; and gastroenterologists, 13.7.

Internists saw more than two out of every three patients in the office and one of every four in the hospital. Of the three types of specialists, cardiologists had the highest proportion of office practice (75 per cent); and gastroenterologists had the greatest hospital practice (32 per cent). In contrast, general practitioners had a higher office (77 per cent) and lower hospital (13 per cent) practice than the internists/cardiologists/gastroenterologists specialists. Among the major private practice specialists, only surgeons had a higher percentage of patient contacts in the hospital (37 per cent) than the gastroenterologist.

The internists/cardiologists/gastroenterologists specialties saw more female than male patients, as did general practitioners (59 per cent female). Cardiologists saw a greater percentage of male patients (49 per cent) than either internists (43 per cent) or gastroenterologists (41 per cent).

As to distribution of patients by age, patients over nineteen years of age accounted for at least nine out of every ten patients seen by internists/cardiologists/gastroenterologists specialists. Only seven of every ten general practitioner patients were in this same age group.

The report showed that almost one of every four diagnoses treated by internists was the result of a referral from another physician. Referrals to cardiologists accounted for almost one-third of the diagnoses treated, and over one-third for gastroenterologists. Just four per cent of the general practitioners' diagnoses were referred from other physicians.

Over 20 per cent of the patients visiting internists and cardiologists had more than one diagnosis. Gastroenterologists differ slightly in that only 15 per cent of the patients seen had more than one diagnosis at the time.

The leading diagnosis for both internists and cardiologists during 1960 was arteriosclerotic heart disease, including coronary disease. Under this classification were such specific diagnoses as angina pectoris without mention of coronary disease; cardiac infarction or thrombosis; rupture of coronary artery; coronary embolism, infarction, occlusion, and such diagnoses.

Ulcer of the duodenum (with or without perforation) was the leading diagnosis for the gastroenterologists.

Based on diagnoses per one thousand patient visits, diabetes mellitus had a rating of 52.9 with the internists and 36.7 with cardiologists.

INFLUENZA DOWN IN 1961

With the approach of winter it is encouraging to learn that 1961 may turn out to be an unusually mild influenza year.

The National Disease and Therapeutic Index recently estimated that there were only 1.7 million patient visits for influenza during the first quarter of the current year. This represented only 20 per cent of the 8.5 million visits projected for the first three months of 1960, an epidemic year.

Historically, the first quarter of the year has accounted for a large proportion of the total influenza patient visits for the full year.

An estimated national influenza patient visit rate for the first three months for the

years 1958 to date are as follows: 4,796 in 1958, 3,063 in 1959, 8,482 in 1960, and 1,698 in 1961.

PRESCRIPTION PRICES

Prescription prices, says the Bureau of Labor Statistics of the U. S. Department of Labor, are moving down. In a report published recently, the Bureau showed that prices for prescriptions were continuing their downward trend which began last June.

This may surprise those who, thanks to the Kefauver hearings, think prescription prices move only in one direction—up.

It is true, of course, that the long-term trend of prescription prices has been upward. Drugs cost more than they used to. So does nearly everything. Drug prices have gone up along with all others, and like any other medical expense they hit us on a tender nerve. It is bad enough to be sick, without having to pay the inevitable bills.

But the Consumer Price Index of the Bureau of Labor Statistics shows that from 1949 through 1959 drug prices have risen about half as much as total medical care costs and slightly less than the cost of living as a whole.

What is the price of the average prescription? A survey published in the April 3, 1961, issue of *American Druggist* showed that in 1960 the prices most frequently charged for prescriptions were \$1.25, \$1.50, and \$2.00. At the opposite extreme, prescriptions costing \$10.00 or more made up only 1.5 per cent of all prescriptions sold. The average prescription price was \$3.25. These statistics hardly seem to support the frequent and well publicized criticism that prescription prices have risen to unreasonable heights.

Confusion sometimes results from failure to distinguish between prescription prices and prescription expenditures. The average American in 1959 spent nearly three times as much for prescriptions as he did in 1949. But this does not mean prescription prices were three times as high in 1959 as they were a decade earlier. Statistics published by *American Druggist* explain this: Americans simply were buying more drugs in 1959. Since

1949 the average number of prescriptions filled per person rose from about 2 to more than 3.5.

One reason people are buying more prescription drugs is that today many potent new drugs are available to treat illnesses that ten years ago could not be effectively treated at all. It is hardly surprising, for example, that more tranquilizers were sold in 1960 than in 1950; in 1950 these drugs didn't exist.

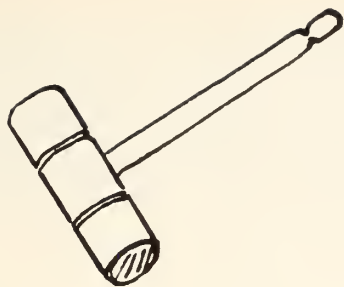
Today's potent new medicines often lower the cost of being ill. In the past, people who contracted pneumonia had to spend several weeks in the hospital, plus weeks of convalescence, at a cost of at least \$300 to \$400. Today, pneumonia can often be cured at home in a short time with less than \$20 worth of antibiotics.

At one time, mastoiditis often involved surgery and cost the patient or his family around \$1,000. Today there is usually no surgery. Instead, the infection is treated with drugs costing around \$15, and classical cases of mastoiditis have become so rare that medical schools have difficulty in locating enough for teaching purposes.

Moreover, while the nation's total outlay for drugs has gone up, purchasers' incomes have risen too.

Even though they are buying a larger number of prescription drugs, people are spending only a slightly larger amount of their income for them. In 1949, out of every dollar which Americans earned, three-tenths of a cent went for prescriptions. Today we are spending six-tenths of a cent. (Compare this amount with the two cents spent for tobacco products and the three cents spent for alcoholic beverages.) The slight increase in drug expenditures certainly does not seem unreasonable when one considers that each of us now purchases nearly twice as many prescription drugs, most of which are far more effective than those available ten years ago.

If drug prices had risen as much as other prices since 1949, the nation's annual bill for drugs would be approximately two hundred million dollars higher than it is.



President's Page



"Image Of The Doctor"

Robert Burns, the convivial Scotch poet, was sitting in church one day; and his poetic imagination was aroused by the sight of a louse on a lady's bonnet in church. He wrote these memorable words:

"O wad some power the giftie gie us
To see oursel's as ithers see us!
It wad frae monie a blunder free us,
and foolish notion:"

Today we hear a great deal about the "Image of the Doctor." This is not a composite picture of doctors as a whole but the individual image which our patients get from our appearance, demeanor, and actions. Further, it is true that Homo sapiens has the god-given ability to "stand off and look at himself," one faculty which raises him above the animal level.

Would it not be well if each of us would take a frequent "look at himself" to determine what his image is? We believe in the individual, and we know how dangerous it is to rely upon mass action.

When one sees his reflection in a mirror, it is common practice to make changes which will make one more presentable. Some of us have a difficult job thrust upon us, but we often make the effort! So, if we reflect upon the image we show our patients, we can often see where a change would be very beneficial. The "giftie" for which Burns was longing lies within our power to develop. But it will

have to be the result of our own personal desire. By making helpful changes in the images of us which present themselves, we can improve our physician status. Certainly we cannot expect distant efforts of large organizations in medicine to improve our image unless we are intensely interested in our own patient service and relationships. By such personal effort, we doctors can surely reduce our problems of misunderstanding and "free oursel's and ithers frae monie a blunder and foolish notion."

John W. Simpson, M. D.



ORGANIZATION SECTION

Transactions of the Woman's Auxiliary to the Medical Association of the State of Alabama, Thirty-Seventh Annual Convention

Part One

FIRST GENERAL SESSION THURSDAY, APRIL 27

The First General Session of the Woman's Auxiliary to the Medical Association of the State of Alabama, was called to order at 11:00 A.M. at the Hotel Stafford by Mrs. John Morris, President. Mrs. George W. Newburn, Jr., Mobile, gave the invocation. Membership pledge was led by Mrs. John Chenault, Decatur. Members were welcomed by Mrs. Morris, and guests were introduced. Mr. Earl B. Dutton, Chicago, Executive Assistant, Women's Activities, AMEF, was present.

Mrs. W. D. Anderson read the convention rules of order. They were accepted. The first report of the Credentials Committee was given by Mrs. Earl Brandon: 35 state board members, 22 delegates, and 8 alternates. The report of the Reading Committee was accepted.

REPORTS OF OFFICERS

President

Mrs. John Morris

Ladies, this has been a year of growth for the Auxiliary. I congratulate you upon your achievements. Your numbers have grown to 1308; you

have contributed over \$5,000 to AMEF; your work in legislation, mental health, civil defense, safety, community service has been fine. Your efforts in promoting the essay contest with the State Medical Association resulted in 71 essays. Your work with rural health, new this year, will grow in coming years. In the field of health careers, \$6,325 has been raised by county Auxiliaries this year for student loans and scholarships in medicine, professional nursing, licensed practical nursing, medical technology, and X-ray technology. Local Auxiliaries have organized seven Future Nurse and Allied Career Clubs this year. You have distributed nearly 3,000 copies of the health career booklet to schools in the state. Recruiting teams have been set up in 53 counties, with a doctor's wife, public health nurse, and a representative from the League for Nursing to work with schools. The health careers booklet is excellent. I mention these things in order to compare them with national figures.

You are a part of the more than 80,000 members of the Auxiliary to the American Medical Association. Through this group, you have in the past eight years raised more than a half-million dollars for the medical schools throughout our country, \$1,033,000 for scholarships and loans for students pursuing health careers. You helped organize 1,931 Future Nurse Clubs; the hours you gave last year to community service would take one woman, working 24 hours a day, 354 years to equal.

Ours is a swift-moving age. What is medical research today is medical education tomorrow and medical practice the next day. It is exciting and rewarding to do our part as Auxiliary members to help advance the cause of good medicine. No one person, nor 20 nor 50, can do it well; but 1300 of us can—together. At the post-convention board meeting last year I remarked that since there was no money in Auxiliary work, we should relax and

ORGANIZATION SECTION

enjoy it. Many of you have told me you are enjoying it. I, too, have found this year stimulating, rewarding, and fun. Let's keep on having FUN!

It has been a pleasure to serve you. I hope that you will continue to progress next year and in the years to come—in harmony and with joy.

Treasurer

Mrs. James F. Crenshaw

Financial Statement

July 1, 1960 to April 24, 1961

Receipts:

Balance on hand	\$2,157.82	
Dues collected		
County Auxiliaries	3,891.00	
Achievement Awards (Montgomery Auxiliary in memory of Mrs. H. L. Rosen)	30.00	
Medical Association of the State of Alabama	200.00	\$6,278.82

Disbursements:

National Dues to Woman's Auxiliary to American Medical Association (1,297 members)	1,297.00
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Expenses of Officers:

Mrs. John Morris, President (National Conference, travel to counties, sta- tionery, postage, supplies, National convention)	637.93
Mrs. W. A. Cunningham, President-Elect (Na- tional Conference and expenses)	200.00
Mrs. J. F. Crenshaw, Treasurer	25.00
Mrs. L. H. Clemmons, Corres. Sec.	15.68
Mrs. H. Price Edwards, Historian	5.22

Expenses of Chairmen:

Mrs. Geo. W. Newburn, Nom. Com.	30.00
Mrs. Seaburt Goodman (AMEF)	50.00
Mrs. William Brock (News Letter)	4.18
Mrs. Geo. W. Newburn, Report Forms	8.85
Mrs. James C. Guin, Health Careers	13.57
Davis Ptg. Co. (News Letter)	418.83

Joint Legislative Council Dues	15.00	
Rural Health Conference, Chicago (President-Elect)	72.83	
Two Honorary Member- ships to National	2.00	
Gift, Southern Medical Assoc.	24.39	
Woman's Auxiliary SAMA	150.00	
Quick Service Letter Co., Inc. (Safety belts) ..	76.29	
Mrs. William Noble, Bulletin Chrm.	5.12	
Fall Board Meeting (Mimeo- graphing and supplies)	23.06	
Modernistic Printers, Inc. (Yearbooks)	164.80	
Medical Association of Ala- bama (Mimeographing questionnaire for Mrs. Geo. W. Newburn) ..	19.43	
Mrs. R. H. Watson and Mrs. T. J. Brothers, Treas., Calhoun County for over- payment of dues (\$3.00 each)	6.00	\$3,265.13

Bank Balance April 26, 1961	\$3,013.64
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State Historian

Mrs. H. Price Edwards

The state historian's report is made up from information sent in by 29 presidents, an increase of five as compared to 1959-60. These report forms were prepared by Mrs. George Newburn. The following is an account of the work of the 29 county auxiliaries as reported by their presidents.

AMERICAN MEDICAL EDUCATION FOUNDATION: This is always a priority project, and every auxiliary participated. Fifteen reported reaching their goals, and five auxiliaries exceeded their goals of \$5 a member. Last year for the first time Alabama was in the top ten of the nation and received an award merit. This year the goal is \$6,000 of which \$5,974.86 has been raised by selling Christmas cards, giving memorial cards, having a style show, and having a Medical Musical Show.

HEALTH CAREERS: This was the second priority project, and the auxiliaries raised \$5,552 for student loans. One auxiliary arranged for a \$1,000 gift from a foundation for nurse scholarships. At present the auxiliaries are sponsoring eight medical students, eleven student nurses, one practical nurse, and one medical technologist. The chairmen in some counties have arranged and accompanied students on tours of teaching hospitals, talked to students on Career Days in high schools, provided educational films, and distributed the much-needed health career booklets.

CIVIL DEFENSE: This was the third priority project; the auxiliaries participated in national and local instructional courses, assisted the Civil

ORGANIZATION SECTION

Defense authorities with flood and storm disaster, and taught first-aid and home nursing. Many have prepared their homes for disaster, and some are complete with food.

SAFETY: Safety was our fourth priority project. The use of safety belts and caution in the water was stressed, as well as poison control, especially among preschool children, and safety care of the aged. Literature on farm and home safety were distributed through county PTA's and Home Demonstration and 4-H groups.

MENTAL HEALTH: The auxiliaries participated in conferences on family life, juvenile delinquency, aging, and mental health. They enlightened their members on the inadequate facilities in the state institutions. They sold articles made by the patients of Bryce Hospital, collected samples for homes of the aging and for an out-patient clinic for the aged, gave money for some of the entertainment and needs of the patients in some of the institutions.

MEMBERSHIP: There are 1308 members. Seventeen counties increased in membership. Three decreased, and two have 100 per cent membership. There are 47 members-at-large.

BULLETIN: Six counties have 100 per cent Bulletin subscription, and eight are not taking it. Three counties plan to raise their dues in order that their members will receive the bulletin.

COMMUNITY SERVICE: All the Alabama auxiliaries are unanimous in their recognition of the value of good public relations. So much was done that many auxiliaries reported that they could not estimate the number of hours contributed. They assisted in Science Fairs, Senior Citizen Week, all the drives as well as the World Day of Prayer, League of Women Voters, and preschool health clinics. They conducted hearing tests for children and assisted in children's sport programs. Three auxiliaries gave public relation teas where the projects and aims of the medical auxiliary were presented, paving the way for better public relations.

LEGISLATION: Many of the counties have 100 per cent voting. Twenty counties reported writing more than 240 letters approving the Mills Bill or opposing Forand-type legislation, and one sent 100 letters to Governor Patterson in regard to the matching funds for the aged.

LETTIE DAFFIN PERDUE: Seven counties contributed a total of \$44.

RURAL HEALTH: Many auxiliaries reported that they have co-operated with Home Demonstration Clubs and 4-H Clubs by giving Today's Health and the health career booklets. They have promoted community-wide clean-up campaigns, distributed AMA health record cards, and provided speakers. The national rural health chairman is an Alabama woman.

ESSAY CONTEST: Eleven counties participated. The subjects were "History of Medicine" or "America's Health—Ours to Preserve."

DOCTOR'S DAY: All the auxiliaries observed this day by either distributing carnations, having the mayors or ministers proclaim the day, or by having a dinner-dance in honor of the doctor-husband. One auxiliary honored the doctors by giving \$108 to the after-care service of mental patients.

WOMAN'S AUXILIARY TO STUDENT AMERICAN MEDICAL ASSOCIATION, or SAMA as it is often called, is sponsored by the State Auxiliary and Jefferson-Birmingham auxiliaries to acquaint the student-doctor's wife with her position and problems in the community. In addition to "putting hubby through," these students' wives are giving their services to the retarded children at the Opportunity Center.

The auxiliary members should congratulate themselves on the outstanding work and achievement this report shows which is a tribute to our president, Mrs. John T. Morris. They know that whatever can be done in other organizations can be done with greater effect through the Medical Auxiliary. It has been said that the most gifted, the most intellectual, and the most advanced women of the state are found in the Woman's Auxiliary to the Medical Association of the State of Alabama.

President-Elect

Mrs. W. A. Cunningham

As of today, the Auxiliary has a paid-up membership of 1308. This is approximately a three per cent increase over the previous year. One new county, Cherokee, was organized. Out of the 67 counties in Alabama, 32 are organized; 24 have members-at-large; 13 counties increased in membership, and 13 others retained the same membership as last year. Two counties reported a loss of three members each due to death or illness. Forty-nine new members were added this year; and we have 47 members-at-large, making a grand total of 1308.

Vice-President

Northeast District, Mrs. W. R. Sutton

At the beginning of the year we had eight organized counties. We held a district meeting on November 10, 1960, at the Reich Hotel, Gadsden, at which time Cherokee County organized with Mrs. White as president.

The group filled out a chart listing times of meetings, number of members, dues, etc., to get an overall picture of the district. Mrs. John T. Morris, State President; Mrs. W. A. Cunningham, State President-Elect; and Mrs. W. G. Thuss were guests. Each spoke at the meeting. Mrs. Seaburt Goodman presented a skit on AMEF and auctioned off her hat and a hat Mrs. Morris had brought to the amusement of the group; and the Gadsden wives put on a fashion show, modeling chic costumes.

COUNTY REPORTS

Blount County

Blount County has seven doctors and seven members in its Auxiliary. We have raised our AMEF quota and gone beyond it with a memorial donation. We furnish the state program chairman, Mrs. Ira Patton of Oneonta, and the N.E. District Vice-President, Mrs. W. R. Sutton of Blountsville. Our goal is a Future Nurses Club in each high school. We have seven high schools and five Future Nurses Clubs. These groups have enjoyed the movies made available through the Chicago office of AMA. We took one club to the state convention of Future Nurses Clubs in Tuscaloosa and had one girl elected State Treasurer, Carolyn Hollis of Blountsville. We have organized a County Council of Future Nurses Clubs at which the girls discuss their mutual problems. We observed Doctor's Day with red carnations. We entertained our State President and President-Elect.

Cherokee County

We have five paid members (100 per cent on March 1, 1961), three members-at-large on March 1, 1960. We organized in November, 1960, with 100 per cent membership. The first meeting was in December, 1960. We have distributed health career booklets to all county high schools, given a Stork Shower at the Health Center to provide necessities for newborn clinic babies, sponsored one of our doctors to speak at the high school on Health Careers which resulted in students planning to visit University Hospital, sponsored a visiting nurse from Gadsden to speak at one of the high schools, and encouraged the clinic mothers to come back to the clinic for post-natal care. Our contributions to AMEF were \$5, and our total subscriptions to the Bulletin were \$5.

DeKalb County

Our Auxiliary meets each third Friday at 1:00 P. M. at Reeves Restaurant. We have ten members, two new this year, with about seven or eight present at each meeting. Two of our members work with the Red Cross. Ann Noble works one day a week in our Civil Defense Office. We are 100 per cent in National Bulletin this year. We remember our husbands on Doctor's Day by pinning a red carnation on them before they leave home on March 31. We plan a barbecue in June at one of our member's summer homes, with our doctors and their families. We are proud of our own Ann Noble, for she has been appointed as a consultant on the President's Committee on Traffic Safety in Washington. We are a small Auxiliary, but we really enjoy meeting and doing things for our community together. Most of us work with our PTA's and help on many community projects.

Jackson County

Our Auxiliary has increased from eleven to twelve members during 1960. There are two doctors in the county who are members of the Associa-

tion but whose wives are not members of our Auxiliary. We are hoping they will become members in the future. Mental health was observed by our voting to sponsor and pay for "Milestones to Marriage," presented by a well-loved and respected minister to 152 Scottsboro High School seniors. Our members addressed the letters with students' names at our monthly meetings so as to give them a personal touch. A public meeting was held at the County Auditorium to hear a state mental health worker lecture. There was good attendance by interested people. The Future Medical Careers chairman has worked diligently to contact and take careers manuals to all schools in Jackson County. We have had an active Careers Club for two years at Scottsboro City High School; also we have had the Nurses Club for two additional years. We have had the medical profession speakers at the annual Careers Day during March at City High for four years—due to Auxiliary members' sponsoring their appearances. Our goal for 1961 is to organize active Careers Clubs in every high school in Jackson County.

Madison County

The Madison County Medical Auxiliary had 61 members with 17 standing committees—100 per cent membership. We continued our work with the spastic children. Members of the Auxiliary made curtains for their new classrooms, filled Christmas stockings, and assisted the teachers every week. Three hundred and five dollars were contributed to the American Medical Education Foundation. Two practical nurses were assisted with their training by \$240.50 from the Nurses Scholarship Fund. Other donations were as follows: Christmas charities, Tubercular Fund, Heart Fund, Cancer Crusade, United Giver's Fund, Retarded Children, Veterans' Christmas Party, Salvation Army, Mental Health, and Square Dance for the mentally ill in Tuscaloosa. Time contributed to community service work was more than 1,450 hours. For Doctor's Day we chose as a theme "Medicine during the Civil War Era." A delightful buffet dinner was served at the Huntsville Country Club. Each doctor was presented a red carnation. The Little Theater presented a skit. Our outstanding event of the year was our public relations project in January. A luncheon and fashion show was given for 150 of our friends. The tables were attractively decorated with Barbie Dolls. In December we were privileged to have Vickie Cunningham as our guest speaker. The members of the Auxiliary made posters and attended the Family Life Conference sponsored by the Mental Health Association. An installation tea will be held on May 11.

Calhoun County

The Woman's Auxiliary to the Calhoun County Medical Society currently has 43 paid members. Our dues are \$10 per year. We have concentrated our efforts in one main direction this year—nursing recruitment. We have given a \$600 scholarship for two years to a Jacksonville girl at Birmingham

ORGANIZATION SECTION

Baptist Hospital. We have felt that as a small auxiliary we could do more good by using our limited funds in this manner. We couldn't afford to give this girl a full scholarship as the tuition at Birmingham Baptist is comparatively high; so the scholarship is for only two years. In return the girl has contracted to serve in an Anniston Hospital for two years. If she fails to do this, she will pay back the money. All parties are pleased with this arrangement. We need nurses in Anniston, and we feel our Auxiliary is rendering a fine service to the doctors and the community by giving this scholarship. Our Auxiliary is not interested in fund raising projects, but we have managed to send AMEF \$86, which is \$2 per member. Last fall, as every year, our Auxiliary helped the doctors with the preschool examinations for the indigent, both white and colored. We also collected sample pediatric medicines from our husbands' offices for use by the doctors in welfare cases. On Doctor's Day individual members sent red carnations to their husbands. Our Auxiliary has voted not to have a big program of any kind on Doctor's Day, as most of us feel it is poor public relations. The most exciting thing we have done this year is to have a Civil Defense Week. It was most successful in bringing the problems before the public, and has geometrically progressed into many other groups in Anniston. Our city is sadly lacking in its Civil Defense program. The climax of the week was a mock nuclear attack in which all city police and many soldiers from Ft. McClellan participated. It showed up the weakness of our alarm system. We had full radio, newspaper, and bill-board coverage; and the city has given us one new siren. Our members have gone into the community and have started courses in first aid, home nursing, and Civil Defense. We feel this big effort by our group has helped public relations a great deal. We have had a happy year, and our members have been in better agreement on many important policies. With the nursing scholarship and the Civil Defense effort, both of which are still going on, we feel we have helped our doctors and the community in the best way.

Mrs. Wm. D. Anderson, Convention Chairman, made announcements.

Mrs. John Holley, Florala, conducted a memorial service in loving memory of Mrs. H. Leon Rosen, Montgomery; Mrs. B. C. Stewart, Covington; Mrs. Joseph L. Parsons, Jefferson-Birmingham; Mrs. Charles P. Grant, Jefferson-Birmingham; Mrs. H. G. Camp, Walker; and Mrs. J. A. Howle, Morgan.

The meeting was recessed to reconvene at the Tuscaloosa Country Club.

Mrs. John Morris presided at luncheon at the Tuscaloosa Country Club, honoring Mrs. William G. Thuss, Sr., Birmingham, First

Vice-President, Woman's Auxiliary to the American Medical Association. Mrs. E. V. Caldwell, Huntsville, gave the invocation.

Mrs. Harvey Searcy, Tuscaloosa, welcomed the group.

Mrs. Robert K. Wilson, Sr., Aliceville, gave the response.

Dr. Hugh Gray, Anniston, President of the Medical Association of the State of Alabama, brought greetings.

Dr. Julius Michaelson, Chairman of the Committee on Public Relations of the State Medical Association, spoke on the importance of Auxiliary action in the field of legislation at this time.

Mrs. Winston Edwards, Wetumpka, State Legislative Chairman, gave information on "Operation Coffee Cup."

The following guests were introduced: Mrs. Wm. A. Cunningham, President-Elect; Mrs. Robert Nelson, President, Tuscaloosa County Auxiliary; Miss Mary Bass, winner of the Essay Contest; Mrs. James D. Bass; Mrs. Hugh Gray; Mr. Earl Dutton, Chicago; members of the newest Auxiliary, Cherokee County; and members-at-large.

Mrs. Seaburt Goodman, AMEF Chairman, presented Certificates of Achievement to the following counties which reached the quota of \$5 per member: Baldwin, Blount, Coffee, Covington, Cullman, Dallas, Elmore, Geneva, Jackson, Jefferson-Birmingham, Madison, Marion, Marshall, Montgomery, and Talladega.

Mrs. Morris introduced Mrs. Wm. G. Thuss, Sr., who is now nominee for President-Elect, Woman's Auxiliary to the American Medical Association. Mrs. Thuss gave the main address, stressing Auxiliary needs for unity of purpose and action in our communities today through the five most important words in the English language: "I am proud of You"; "What is Your opinion?"; "If You please"; "Thank You"; "You."

Mrs. William D. Anderson announced the plans for the afternoon to include a tour of homes and a tea at the President's Mansion, courtesy of the University of Alabama.



ASSOCIATION FORUM

Medicine And The Social Revolution In Great Britain

A. LAWRENCE ABEL, M. S., F. R. C. F.

London, England

In recent years Britain has undergone a great social revolution. Hunger, poverty, and the fear of the effects of under-employment and of illness have largely been swept away. A tremendous building program has provided decent houses for many people who previously lived in slums. The standard of living for the vast majority of our people has risen more in ten years than in the previous hundred. The situation was summed up by an aristocratic old lady who lives with her

husband, without resident help, in one of the stately homes of Britain, when she said to me recently, "We have lived through a revolution but we still have our heads on our shoulders and we still have our roof over our heads." It has been a bloodless revolution.

One hundred fifty years ago Jeremy Bentham, the great philosopher, conceived that medicine had a duty to society as well as to the individual: that doctors should be concerned more with the public health and less with the relief of individual persons. Professor Sir Arthur Thomson, the immediate past president of the British Medical Association, recently pointed out that in the last century it was the physicians who "far from opposing change, were the leaders in liberal reforms" because they "were ordinary decent men whose work brought them in close contact with the misery of the poor and underprivileged." The physicians themselves were responsible primarily for all the great advances which were eventually established by

Dr. Abel is senior surgeon to the Royal Marsden Hospital and Institute of Cancer Research, Royal Cancer Hospital; member of council and former vice president, Royal College of Surgeons of England; member of Councils, Imperial Cancer Research Fund and British Medical Association; and honorary Fellow, American Proctologic Society.

Presented before the Eastern Regional Meeting of the Pharmaceutical Manufacturers Association, New York City, Socio-Economic Development Session, December 9, 1959.

law: notification of infectious diseases and of the causes of death, the need for greater care of the poor, compulsory vaccination against smallpox, the medical care of school children, the campaign against nefarious secret remedies and abortifacients, and the reform of medical education. Many of these were the subject of bitter controversy but the British Medical Association succeeded in bringing about much-needed reforms.

During the last fifty years it has again been the association of the vast majority of the physicians of Britain which originated reforms: In 1905 they stressed the need for contract practice in many areas, and a few years later they acknowledged "that adequate medical attendance shall be placed within the reach of all members of the community."

Illness was a greater tragedy at the beginning of the century than now. In 1911 national insurance was introduced for home illness only and for only 25 per cent of the workers but not for their families or dependents. The figure was increased to 40 per cent early in World War II. Hospital service was not included. Some hospitals were supported by voluntary donations, some by city taxes. Patients were charged a small proportion of the hospital cost. In voluntary institutions the consultants and specialists were not paid but lived by fees from private patients treated mainly in private clinics, in nursing homes, and in a small number of private beds in a very few of the hospitals. Municipal hospital doctors were paid a small but living wage but did not see any private patients.

The insurance system won general support for two reasons: first, the management and control of professional work and the disciplining of physicians was left in the hands of the profession who exercised collective responsibility; and second, plenty of work remained for a medical man outside the insurance scheme.

But soon after World War I further reports by the British Medical Association stressed the need for the inclusion of dependents of low-income workers and the need for the pro-

vision of adequate hospital facilities. Neville Chamberlain's Local Government Act of 1929 led to a great improvement in municipal hospitals, particularly in the counties of London and Middlesex.

The next great reform was foreshadowed in the famous Beveridge Report of 1942 introducing the concept of the welfare state at a time when our Prime Minister was Winston Churchill.

Throughout the many plans and recommendations, however, we physicians called attention to the undesirability of direct government control.

The National Health Service

COST.—The politicians promised so-called free medical care for the whole nation and for visitors taken ill on our shores. They estimated that it would cost \$500 million a year. But within three years it cost \$1,200 million and now it costs \$2 billion a year. "Free" medical care is costing more than before and has become one of the most expensive items of the budget. Nevertheless, it amounts to a small percentage of what I believe economists these days call the "total national product." The cost of a complete health service for the whole population in Britain now works out at an annual premium of approximately \$40 a year per head. About nine tenths of the cost is paid through general taxation and only one tenth through insurance contribution.

WITH REGARD TO THE PUBLIC.—Every person may have his or her own state doctor or may seek a doctor privately; many have both. There is no doubt that the vast majority of the community favors the service because it gives them what they look on as free treatment and because they think illness is divorced from almost all financial worry. The majority of the wealthy and poor alike demand what they call their rights and usually get them. Many insist that the family doctor send them to a hospital where, depending on the nature of their illness, they are

seen by a consultant or by a junior member of the hospital staff. There has been an extension of consultant services throughout the country, leading to easier access to all types of specialists nearer the patient's own home.

I know something has been said on this side of the Atlantic about free choice of physician in Britain's Health Service. I would like to make it clear that the patient in our health service has complete freedom of choice of his general practitioner. As for the specialist's advice, the patient always has had to depend on the recommendation of his family doctor. If the patient is too ill to attend a hospital outpatient clinic the doctor can arrange through the National Health Service for a home consultation with a specialist, and the specialist receives a fee for it. Patients admitted to a hospital have no choice of specialist.

Many doctors feel that a patient who seemingly pays nothing for his medical care tends to lose his self respect and that this changes the doctor-patient relationship. Some feel that the patients tend to develop a questioning attitude and that the status of the doctor has been lowered, that he is treated with less respect.

Others feel that patients should have a positive sense of their own responsibility for medical care and suggest that at least a small payment should be made so that patients will realize they cannot get something for nothing. This, it is believed, would deter irresponsible use of the service and go a long way to restore the independence of the doctor. It is also believed that this would give the patient a greater interest in his own recovery and that a small payment would be a useful part of therapeutic treatment. However, all are agreed that there should be no insurmountable financial barrier between any member of the community and the recovery of his health. The difficulty is to decide exactly what is a financial barrier.

The government originally promised that the people of Britain or visitors to our Islands who are taken ill there might have any part or all of the service. However, a patient who

consults a doctor privately is not allowed to obtain any free drugs. He must either go to a state doctor as a state patient and have his drugs ordered on a state form, or, if he consults a doctor in a private capacity, he must pay for his own drugs which in effect means that he pays twice. This affects many people who would like private consultation at their convenience or at their own home without waiting in a queue but who think they cannot afford an added burden such as payment for drugs.

That there is a wish for private medical care is exemplified by the fact that there has been a great and rapid increase in the numbers who cover themselves for private medical expenses by provident insurance schemes. The fees payable cover reasonable medical fees for family doctor and specialist and for the cost of a private room in a hospital or a nursing home. Thus, as in your country, the family is assured of private medical care and treatment without hardship.

WITH REGARD TO FAMILY DOCTORS.—Among the benefits claimed for physicians is the fact that they receive a steady income without bad debts and without having to send out a large number of small accounts at the end of each month or quarter. Many feel that this is a great benefit, and as few can afford secretarial assistance it benefits the wives who in many cases were loaded with this practical side of medical practice. However, the rising cost of living and the falling value of money is quickly noticed because the doctor cannot raise his fees but has to wait until protracted negotiations with the bureaucracy produce, or fail to produce, a little more.

Another claimed advantage is that group practice, that is, several doctors working together, has been encouraged and is increasing. A rota system is worked out for night and week-end duties which affords more leisure for the doctors. They are able to leave home for refresher courses at rare intervals and substitutes are paid for.

Another good point which the service was intended to bring about was that physicians would have more time for the care of the

health in addition to the illnesses of the people. With the removal of a financial barrier the doctor should be able to see patients earlier in the course of their illness. This is true for the smaller, more intimate, but poorly paid practices, but not for the larger industrial practice with a full list. One doctor recently wrote that people still come in late stages of disease saying, "I know you are so busy, so I did not want to bother you, doctor."

A physician is allowed to be responsible for not more than 3,500 persons (on his list as it is called), although dividing the 22,000 general practitioners into the number of population means that the average number per doctor is 2,250. Many doctors feel that good medical care is difficult with 3,500 persons to attend, which happens in big industrial areas. On the other hand, in small rural communities, a small list carries a much greater proportion of expenses and many doctors suffer financial hardship.

The family doctor receives payment on a sliding scale depending on the number of persons on his list, and averages \$3 per person per year. After deducting allowable expenses the average doctor's income is about \$6,800 per year before he pays tax. In addition to his state patient, a doctor may treat patients privately, but private practice has diminished so much that it seldom contributes more than 1 or 2 per cent to his income, and rarely as much as 5 per cent.

Among the disadvantages are the facts that all family physicians are paid on the same scale and there is no increased income for the better practitioner. There is, therefore, a threat to natural incentive to improve the quality of medical work. The measure of success is the size of the list. Many feel that too many patients are needed on a doctor's list to produce an adequate income.

Many physicians would welcome an item of service payment as affording a greater incentive than a uniform capitation fee which depends on the size of the list and not on the amount of work done.

In a few areas family physicians have access to a small hospital where they can study

their patients and treat them for minor disabilities. These are linked with bigger hospitals and have specialist services available. Unfortunately the number of hospitals available for this aspect of family doctor work is very small and the beds do not amount to more than about 1 per cent of the total hospital beds of the country. Many keen doctors who feel they would like to follow their patients to the hospital and take some part in their daily care complain that they are unable to do so and that there is consequent loss of continuity of treatment.

Many physicians would like to carry out small surgical procedures for their patients but they receive no extra pay for this and so they send many more of their patients to hospitals. The increase in the number of patients referred to hospitals has resulted in long waiting lists especially for the more chronic cases.

Since the National Health Service was put into effect it has been difficult, if not impossible, to change from one town to another, and general practitioners are excluded from all hope of promotion to hospital consultant.

WITH REGARD TO HOSPITAL STAFFS.—All the hospitals, except a handful of religious and masonic ones, are nationalized. This means that specialists have virtually no beds for treating patients except in the state hospitals. Very few of the previously voluntary hospitals had up to 10 per cent of their beds for fee-paying patients. Most, including the municipal hospitals had none. For the wealthy, and for others who have been thrifty to ensure privacy and the choice of their specialist, a few hospitals offer a diminished number of private beds. Private clinics are very few and so most of the specialist's income is derived from the government. However, all specialists in ex-voluntary hospitals are now paid for work they previously did for nothing. Those in ex-municipal hospitals are paid the same rates as the doctors holding more important positions in other hospitals.

Many consultants believe the profession no longer has the same influence in administer-

ing and planning hospital service and complain about excessive infiltration by lay people into hospital management. Also they charge that administrators attempt to run hospitals without physicians, and that medical men are to a large extent excluded from their councils. They feel that appointments to hospital boards tend to be political. No more than 25 per cent of a hospital board consists of doctors. There is a tendency to hand-pick medical advice and for medical representation not to be elected democratically. Members of hospital staffs have very little say in choosing new colleagues.

PAY OF PHYSICIANS.—At about the time of inauguration of the service certain reports were accepted by the government and profession alike on the understanding that they formed the *Magna Cartas* for the future payment of doctors, that medical standards should be preserved, and that remuneration would be adjusted to the changing value of money. The politicians promised that they would carry out these recommendations. What happened to this promise? Within two or three years family doctors complained that the government was underpaying them. The government did not agree but allowed an independent arbitrator to adjudicate; the learned judge found that there should be 100 per cent increase, and this was paid in 1951. Hospital physicians, who almost equal in numbers family physicians, also claimed an increase, but the shock of the family physicians' award was so great that arbitration was, and still is, consistently refused. Although small increases have been made since, the value of money has diminished by about 30 per cent and this increase was claimed two or three years ago. For months the government took no notice and finally set up a Royal Commission to investigate the whole matter. This consists entirely of nonmedical men who are expected to report within the next few months.

Throughout the eleven years of the service all grades of hospital doctors—consultants, senior residents, and interns—have received only between 55 and 65 per cent of what was

promised. However, the number of consultants and specialists throughout the country has increased by a third and all have regular pay, a good deal of security of tenure, and a pension at the age of sixty-five. They are, of course, tied to their hospital duties for the proportion of their time their contract covers.

In addition to this work many have to serve on innumerable committees in a voluntary capacity. Many of the most senior and top-grade specialists have to spend long hours arguing with the government, usually with little or no beneficial result.

WITH REGARD TO THE HOSPITALS.—One in five British hospitals is one hundred years old and two out of three are seventy years old. Before World War II \$50 million was spent a year on new hospitals and major extensions which represented 32 per cent of hospital expenditure. In the first ten years of the Health Service only \$30 million was so spent. A year has been spent on improvements and no new general or mental hospital has been built in England or Wales since before the war. Lack of hospital expenditure was, to some degree, dependent on the precarious economic conditions in the few years after the war, but recently the sum has been increased to \$60 million.

The suggestions of the profession that hospitals should be grouped have been adopted, and this should have led to an economy of man power, better experience for the specialist, and better care for the patient. Alas, this does not always come about. The state assumed responsibility for providing enough properly equipped hospital beds where they are needed; but in some areas it is more difficult to get into a hospital than before, and in some places there are long waiting lists.

A number of new hospitals are now in the process of being built, but the British Medical Association has recently pressed that these should be speeded up and other new hospitals begun as quickly as possible. The association has pointed out the need for more air conditioning and for more adequate facilities for sterilization and for recovery wards, and maintains that at least one third of the beds

should be replaced by new hospitals. Instead of the \$100 million promised for two years hence the British Medical Association is pressing for \$200 million per annum now.

DRUGS.—I feel sure that most of you will agree that in the last twenty-five years there have been more advances in medicine than in the previous twenty-five centuries. Many of these advances are due to the exertions of physicians and scientists in our hospitals and universities, but I would be the first to acknowledge the enormous role which has been played by the scientific departments of the great pharmaceutical houses. Since the introduction of the Health Service the number of hospital beds has decreased by 12 per cent and this is, to some extent, a reflection of the dramatic and pleasing advances in the treatment of tuberculosis and other diseases. The pharmaceutical industry can well take pride in the part it has played in bringing this about.

The pharmaceutical costs of the health service are nearly 10 per cent of the total cost and have risen to over \$160 million. At least 10 per cent of this has been spent by the pharmaceutical houses on research work in Britain.

J. H. Dunning, M. D., in his book *American Investment in British Manufacturing Industry* (Essential Books, 1955) pointed out that only 7 of the 24 United Kingdom companies specializing in ethical drugs are British owned. The American invasion springs from the great depth of activity, willingness to take risks, and freedom over financial controls of the United States pharmaceutical industry.

The president of one of your great pharmaceutical companies said, "We feel that whereas the United States programs may be particularly strong in some areas . . . our research colleagues abroad are particularly strong in complementary scientific disciplines . . ." Sir Arthur Thomson recently said, "No one now questions the value of medical treatment and it is important to remember that most of the improvements have been derived from cultivation of basic sciences rather than the development of clinical methods."

The head of the American company also said, "But beyond strengths in individual scientific disciplines is the matter of scientific philosophies, which also differs—slightly but significantly. Therefore, if we can share not only strengths but, in addition, exchange philosophies, both the American and British research functions will be enriched whether or not any specific products are developed."

American firms often employ British scientists to work in the United States. But some Americans are investing in British scientists in Britain, knowing that if they pick the right men results will follow. The Americans are pouring large sums into research and development. One firm alone employs over 700 in Britain and last year spent \$12 million for this purpose.

Successive governments, Labour and Conservative, are responsible through the National Health Service cut-price policy for curbing the research potential of the British industry, and now American firms are utilizing British skills. If cheap drugs are a political necessity we may well ask if a government will make amends by allowing tax concessions for research or providing more money for research through other channels.

Conclusions

The basis of a successful health service can be built only on a sound relationship between medicine and the state, and it is this with which we have been wrestling during the first eleven years of the Health Service in Britain. As Sir Arthur Thomson has pointed out, "Most doctors were convinced that medical reform was both desirable and inevitable." They "were anxious lest reform should take such a shape that they forfeit their independence and that the ideals of medicine will be lost." Most doctors are more disturbed about the fate of their profession and the nature of their work than they are about their pay . . . Social policy must influence practice but it must never dominate it and exclude that intimate relationship between a doctor and his

patients which is essential to all good clinical work."

Every nation must determine the precise relation of medical practice to society. The medical profession in my country does not wish to wreck the National Health Service. On the contrary it is only keen, hard, energetic labor by the vast majority of practitioners that has made the service work and has improved it, but there is still much to do. It acknowledges that some public organization of medical service in my country is necessary but it wishes decisions on organization to be removed from the realm of politics. For every nation there is the problem of what to do for the portion of the population that cannot afford to pay for full medical care. I feel there must be some form of insurance, voluntary or compulsory, perhaps with some form of state aid or partnership, but I feel that those who can afford to look after themselves should be encouraged to do so. I strongly advise that however much the ordinary citizen is helped financially for medical care he should be asked to make some payment for the services he receives. The big problem is to remove the fear of many that a serious illness or operation will be crippling financially.

I warn you of the greatest danger of all; the bureaucratic machine, which by the turning of the screw can do more damage to doctors and to the general welfare of the patients

than anything else. Fortunately in Britain the profession is not completely nationalized but a large proportion of it is, and there seems to be a continual struggle between our profession and the bureaucracy. A sound health service should be based on freedom for the patient and the profession.

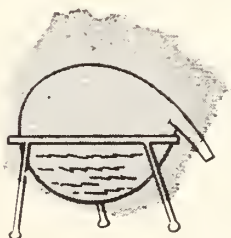
I think if Abraham Lincoln were here to-day he might have used words similar to those he used at Gettysburg:

It is for us to be dedicated to the great task before us, that we here highly resolve that these professions under God shall have a new birth of freedom, and that freedom of medical care and treatment of the people, by the people, for the people, shall not perish from the earth.

In thanking you once again for the honor you have done me, in inviting me to speak to you, and in listening to me, I am reminded of the words of that great American poet and author, Ralph Waldo Emerson, who in a speech in Manchester, England, one hundred thirteen years ago, said:

So, gentlemen, I feel in regard to this aged England . . . pressed upon by transitions of trade and competing populations—I see her, not dispirited, not weak, but well remembering that she has seen dark days before; indeed, with a kind of instinct that she sees a little better in a cloudy day, and that, in storm of battle and calamity, she has a secret vigour and a pulse like a cannon.

Reprinted from *New York State Journal of Medicine*.



The History Of Medicine

ANDY COLLINS

Guntersville, Alabama

In every worthy pursuit of life, there is a basic incentive without which that pursuit would be invalid. It is such a principle which has made medicine a profession held in high esteem for centuries. But, far above its professional status, medicine is essentially a cause; and that cause has marched against monumental odds for succeeding generations to bring modern man a hope of a longer, happier life.

It was in that period soon after the creation of man that medicine began its march. Hewing a path through the dark forest of primitive man's ignorance, superstition, and complacency, its early practice included an operation developed by Stone Age man for the treatment of emotional diseases. Trepanning,

the name by which we know this process, supposedly was to allow evil spirits to escape through the hole bored in the skull.

Gradually, early man began to make observations and to be inquisitive about the wonders of his body. The English philosopher Bacon wrote: "A man's own observation, what he finds good of and what he finds hurt of, is the best physic to preserve health."¹ By developing methods of diagnosis and treatment, the ancient civilizations of Egypt, India, and China contributed to the march of medicine.

Four hundred years before the birth of Christ, a Greek physician made observations causing him to conclude that all diseases stemmed from natural causes. By his use of this theory, Hippocrates extricated medicine from the superstition which had engulfed it and inhibited its progress. His rank as "The Father of Modern Medicine" was earned as much by the Hippocratic Oath, a declaration of the relationship of the patient and

Mr. Collins graduated this year from Marshall County High School in Guntersville and won third place in the annual essay contest sponsored by the Medical Association of the State of Alabama and its Auxiliary.

doctor exemplified by his own life, as by his discoveries.

The Roman Empire, too, had a contribution to make to medicine; and their vast improvement in sanitary methods was a significant legacy.

Galen, living five hundred years after Hippocrates, was the product of the era of Roman supremacy. His writings and methods were accepted for hundreds of years, and his fame as the "Father of Anatomy" has survived until our time.

By the Middle Ages the march of medicine had made a somewhat creditable road to travel compared to its start. However, superstition and ignorance still made themselves apparent in such practices as blood-letting; and the position of the surgeon was closely akin to that of the barber. But finer opportunities for medical education and clinical study were brought about by the establishing of medical schools and more adequate hospitals.

The Middle Ages witnessed many enlightening developments.

In the sixteenth century, the Italian, Vesalius, corrected false ideas about anatomy by his observations; and Johan Weyer, a German physician, took the first steps toward the treatment of mental illnesses, a problem which is still critical.

An English doctor named William Harvey discovered the circulation of the blood, one of the most notable events in medical history, during the seventeenth century.

Through his observations about the relationships of the dreaded killer, smallpox, and a milkmaid's disease called cowpox, Edward Jenner developed a vaccination for smallpox. The work of this rural English doctor is the foundation of modern immunization techniques, and untold suffering and grief have been prevented because of it.

The end of the Middle Ages proved an important turn for the march of medicine to make along its path; when it was completed, the nineteenth century, the adolescence of medicine, lay ahead. Rapidly progressing

along its journey, medicine faced discoveries which at least equaled previous ones in importance and far exceeded them in number.

Perhaps the first great stride forward was made by a mounted Kentucky doctor named Ephraim MacDowell. Operating on his living-room table without the benefit of anesthesia, he actually opened the abdomen of a living person; and the operation was a success!

One medical historian commented about MacDowell's landmark in surgery:

In that dark age of surgery, it was a brilliant beacon which inspired . . . glorious visions of the future. Later, however, when . . . plunged into the midst of the century's tempestuous progress in surgery, MacDowell's primitive operation became a symbol of the limited knowledge, the now almost inconceivable suffering and cruelty of that ancient era.²

Viewing a surgical operation in 1800 meant witnessing terrible suffering. It was, therefore, a noteworthy event when the use of anesthetics in surgery was pioneered. Dr. Crawford W. Long, a Georgia surgeon, first used ether as a surgical anesthetic in 1842; and an American dentist named William Morton was the first to demonstrate its effect publicly.

Having operated on the anesthetized patient during the demonstration, Dr. John C. Warren, the famous surgeon, conceded the wonder of the discovery. A witness later said:

Warren straightened up, the scalpel still in his hand, his face paler than usual. His eyes seemed alight with the glory of an inconceivable miracle. "Gentlemen," he exclaimed at last, "this is no humbug." And suddenly there was wetness on his lined, parched-looking cheeks. Warren, the terse, aloof, unemotional Warren, had tears in his eyes.³

About the time Long and Morton were making medical history with their use of ether, Sir James Y. Simpson, a Scottish obste-

trician, caused heated argument in Britain by his use of chloroform to relieve the pains of childbirth. The value of Simpson's discovery was confirmed, however, when Queen Victoria gave birth to her seventh child while under the influence of chloroform.

The ignorance in which man had long existed had allowed him to accept the theory of spontaneous generation—the springing of life from lifeless matter. But in France Dr. Louis Pasteur proved through brilliant research that there existed tiny creatures, which, he concluded by his experiments, caused fermentation and putrefaction. Pasteur's contemporaries were unwilling to accept his theory, however. Writing about it, the medical journalist Thorwald states:

Pasteur's hypothesis encountered violent resistance from almost all scientists. They asserted that these living creatures, insofar as they really existed, were not the cause of fermentation but a consequence of it, the result, as it were, of new molecular combinations.⁴

Determination and an obscure country doctor named Robert Koch aided the final acceptance of Pasteur's findings. Continuing Pasteur's work in his German home, he proved the germ theory of disease conclusively; medicine can attribute to his research the isolation of the agent of tuberculosis.

In addition to the importance of its own essence, the germ theory of disease helped make possible another immortal event in medicine's march through the centuries.

Having read of Pasteur's work, Dr. Joseph Lister, Professor of Surgery at Glasgow University, sought to use it as a basis for eliminating the chief cause of surgical deaths, gangrene and pyemia.

When Lister read of the use of a coal-tar preparation called carbolic acid to eliminate stench in city sanitation systems, he concluded that, if the carbolic acid would kill the putrefactive microbes, it might prevent the suppuration of wounds. The success of his experiment was astonishing, and the true

significance of the use of antiseptics is immeasurable.

With the passing of the greatest century in its history, the march of medicine is steadily progressing along a smoother road.

Medical education has reached a great height in organization and research.

Making possible new vistas of research and treatment, atomic energy research has joined Roentgen's X-ray as a great contributor in those fields.

A long line of sulfa drugs and antibiotics has been discovered for use in the treatment of an infinite number of diseases.

Striking against dread poliomyelitis, Dr. Jonas Salk developed a vaccine declared safe in 1955; and the paralyzing disease has been well subdued by it.

Disease, research, failure—all are a part of the march of medicine. The underlying force that has motivated its progress has held it in good stead against almost insurmountable obstacles; and it has nearly brought it to the object of its toil forward.

Thousands of men and women have dedicated their lives to the cause that is medicine; and that self-sacrifice is itself the key to the mysterious incentive. Hippocrates had this compassion for the suffering and helpless in mind when he wrote in his Hippocratic Oath:

I swear . . . so far as power and discernment shall be mine, I will carry out regimen for the benefit of the sick and will keep them from harm and wrong. . . . Into whatsoever house I shall enter I will go for the benefit of the sick.⁵

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3. *Ibid.*, p. 61.
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around the state



Dr. Holbrooke Seltzer (left) is answering questions from the floor during the Alabama Diabetes Association meeting in Birmingham, September 17. Seated left to right are Dr. Leon Smelo, Dr. Samuel Beaser, Dr. Seltzer, and Dr. Rosalyn Yalow.

(left below) Speakers at the second Eli Lilly Road Show in Selma on September 14 are, left to right, Dr. Paul S. Derian, Dr. Herbert G. Langford, and Dr. Thomas K. Williams. Also seated at the speakers table is Dr. William E. Ehler.

(below) Wives of physicians were entertained in the Bridge Room of the Selma Country Club. Shown (left to right) are Mrs. James F. Alison, Mrs. Donald C. Overstreet, Mrs. S. M. Kirkpatrick and Mrs. Jasper Moore.



MEDICAL PROGRESS ASSEMBLY



ACADEMY OF PEDIATRICS





MEDICAL CENTER NEWS

16 YEARS OF PROGRESS



Aerial view of the University of Alabama Medical Center.

The long range plan of the University of Alabama Medical Center is to establish in Birmingham one of the most complete health and medical areas in the world.

The health complex, destined to cause national ripples in the field of medicine, was begun less than 17 years ago when the University of Alabama moved its two-year medical college within a stone's throw of the hubbub of this industrial city.

Although the Medical College of Alabama began over 100 years ago and University Hospital had its origin in 1883, the University of Alabama Medical Center had its inception in 1944 when the Hospital was acquired by the University. The two-year Medical College, then located in Tuscaloosa, was expanded to a full four-year institution with the move to Birmingham.

The acquisition came about when the City of Birmingham and Jefferson County agreed to transfer operation of the Jefferson-Hillman Hospital to the University, along with its out- and in-patient clinics, which serve the most concentrated center of population in the state. Simultaneously, the University bought a block of apartment buildings for the purpose of housing its staff and a portion of the student body. This was the embryo of today's fully accredited four-year medical school maintaining a faculty of nearly 400 and serving the entire state.

University Hospital, completed in 1941, has a 600-bed capacity and provides primary clinical and teaching facilities for the Medical College and post-graduate instruction for interns and residents. The Hospital also offers degrees in nursing, anesthesiology, radiological technology, and medical technology.

Year by year, additional features have been added to enlarge the University's tri-fold program of education, community service, and research. In 1948 the School of Dentistry was created. This provides a four-year program leading to the D.M.D. degree, offers a master's degree in dentistry, and gives post-graduate instruction for dental specialists and general practitioners. The Medical College and School of Dentistry operate several buildings in the hospital block.

By 1951, the University was busy with construction of the Basic Sciences and Dental Clinic buildings. Until this time, older existing facilities had been used.

An enormous surge forward came when the Birmingham Housing Authority offered ten blocks of slum area to the University for Center development.

A \$1,033,500 grant from the National Institutes of Health permitted construction of a Research Building in 1960. It spans a street to connect the Basic Sciences Building to University Hospital. Here is found research

MEDICAL CENTER NEWS

labs in all of the medical sciences, ranking in the upper third of the nation.

Many related health field agencies, including the Anti-Tuberculosis Association and the Jefferson County Medical Society, have been attracted to the Medical Center. Others plan to build on their portions of the land which they have acquired from the University. The Old Salvation Army Building houses part of the Speech and Hearing Clinic, Alacraft, storage, and shops. The former 'Dr. Gus' Restaurant houses the University Hospital's School of Nursing.

In the Center, opened in 1952 and containing 479 beds, is the Veterans Hospital. Actually operated by the Veterans' Administration, the hospital has operations closely allied to the Medical Center.

Also located within the complex is a 100-bed Crippled Children's Clinic built with funds from Clinic football games played each Thanksgiving Day between the city's two top-ranking high school teams. The games have become an annual affair and the funds continue to go to the Clinic.

Completed this year and already in operation is a modern \$2,800,000 Children's Hospital offering medical care geared completely to serving children from infancy to the eighteenth year.

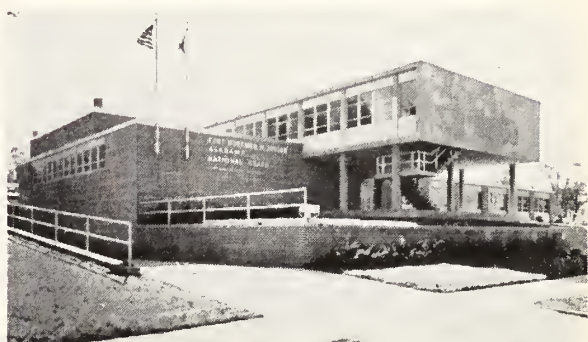
The Public Health Building, another agency which has since become affiliated with the Medical Center, was finished in 1951.

The Medical Center campus is located within a block of Southern Research Institute, one of the foremost independent research institutions in the country. There is a close working arrangement between the Institute and the Medical Center in such programs as cancer research.

The University has a great vision for improving and expanding a program of education, research, and service in the health fields which will benefit the entire South, the nation, and the world. This vision is gradually being transformed from a great vision to a far-reaching reality.



The Children's Hospital



Fort Mortimer H. Jordan Alabama National Guard 109th Evacuation Hospital.



Proposed Faculty-Student Housing



Proposed Nurses Residence



University Hospital, Hillman Clinic, and the new Health Sciences Research Building.

DEPARTMENT OF HEALTH

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	July	August	*E. E. August
Tuberculosis	147	109	188
Syphilis	135	152	144
Gonorrhea	313	387	400
Chancroid	4	7	3
Typhoid fever	3	0	6
Undulant fever	0	0	2
Amebic dysentery	3	4	2
Scarlet fever & strep. throat	29	19	17
Diphtheria	3	4	5
Whooping cough	3	3	33
Meningitis	4	6	10
Tularemia	0	0	0
Tetanus	2	1	3
Poliomyelitis	4	1	38
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	82	27	55
Chickenpox	23	19	5
Mumps	22	8	31
Infectious hepatitis	136	123	29
Typhus fever	0	0	1
Malaria	0	0	0
Cancer	764	608	473
Pellagra	1	0	0
Rheumatic fever	25	22	7
Rheumatic heart	20	20	13
Influenza	20	18	45
Pneumonia	160	134	117
Rabies—Human cases	0	0	0
Pos. animal heads	2	6	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

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BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

August 1961

Examinations for malaria	23
Examinations for diphtheria bacilli and Vincent's	72
Agglutination tests	581
Typhoid cultures (blood, feces and urine)	540
Brucella cultures	4
Darkfield examinations	4
Examinations for intestinal parasites	3,364
Serologic tests for syphilis (blood and spinal fluid)	26,404
Examinations for gonococci	1,974
Complement fixation tests	104
Examinations for tubercle bacilli	3,865
Examinations for Negri bodies (smears and animal inoculations)	269
Water examinations	3,081
Milk and dairy products examinations	4,070
Miscellaneous examinations	3,988
Total	48,343

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA—JUNE 1961

Live Births Deaths Causes of Death	Number Registered During June 1961			Rates* (Annual Basis)		
	Total	White	Non- White	1961	1960	1959
Live births	5,978	3,841	2,137	22.0	22.0	22.9
Deaths	2,268	1,456	812	8.3	8.3	8.6
Fetal deaths	142	59	83	23.2	23.7	26.6
Infant deaths—						
under one month	139	83	56	23.2	23.4	24.8
under one year	186	99	87	31.1	30.0	34.9
Maternal deaths	2		2	3.3	6.6	3.2
Cause of Death						
Tuberculosis, 001-019	20	10	10	7.4	7.1	7.9
Syphilis, 020-029	4	1	3	1.5	2.2	1.5
Dysentery, 045-048	1	1		0.4		0.8
Diphtheria, 055						
Whooping cough, 056	1		1	0.4	0.4	
Meningococcal infections, 057					0.7	0.4
Poliomyelitis, 080, 081	1	1		0.4		0.4
Measles, 085	1	1		0.4	0.7	1.1
Malignant neoplasms, 140-205	312	223	89	114.8	102.9	124.5
Diabetes mellitus, 260	39	26	13	14.4	14.2	8.7
Pellagra, 281						0.4
Vascular lesions of central nervous system, 330-334	319	208	111	117.4	119.3	119.2
Rheumatic fever, 400-402					0.7	0.4
Diseases of the heart, 410-443	768	506	262	282.7	275.6	288.6
Hypertension with heart disease, 440-443	166	63	103	61.1	38.0	55.5
Diseases of the arteries, 450-456	41	25	16	15.1	17.2	14.7
Influenza, 480-483	5	5		1.8	3.4	1.1
Pneumonia, all forms, 490-493	54	26	28	19.9	16.4	22.6
Bronchitis, 500-502	1	1		0.4	1.1	0.8
Appendicitis, 550-553					0.7	
Intestinal obstruction and hernia, 560, 561, 570	10	6	4	3.7	3.7	3.8
Gastro-enteritis and colitis, under 2, 571.0, 764	6	1	5	2.2	1.9	4.9
Cirrhosis of liver, 581	16	11	5	5.9	7.1	7.2
Diseases of pregnancy and childbirth, 640-689	2		2	3.3	6.6	3.2
Congenital malformations, 750-759	23	15	8	3.8	5.1	5.1
Immaturity at birth, 774-776	45	23	22	7.5	9.3	7.9
Accidents, total, 800-962	168	123	45	61.8	74.2	61.5
Motor vehicle accidents, 810-835, 960	83	66	17	30.6	37.3	27.2
All other defined causes	314	189	125	115.6	110.4	127.9
Ill-defined and unknown causes, 780-793, 795	117	54	63	43.1	35.4	26.4

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

December 1961

No. 6

The Use Of Guanethidine In Private Practice

F. BERNARD SCHULTZ, M. D., F. A. C. C.

AUBURN, ALABAMA

The past decade has seen the introduction of several important hypotensive agents which have been of great clinical value in the control of hypertension. I am sure we would all agree that despite the many new drugs, the proper treatment of hypertension remains a challenge worthy of serious study by the medical profession. The basic problem consists of establishing a satisfactory adjustment between the patient's pressure, his medication, and the environment in which the patient must function. Complete control of blood pressure is impractical if the means by which this is achieved incapacitates the patient.

This interrelationship is particularly obvious in the management of the more severe grades of hypertension requiring the use of potent antihypertensives such as the ganglionic blocking drugs. Good as some of these agents have been, a true breakthrough in advancing antihypertensive therapy with a drug that has a specificity of site of action has not been made until recently. This latest achievement is guanethidine (Ismelin[®], CIBA), which is exceptional in that its site of action differs from the ganglioplegic drugs used to date and thus eliminates many of the serious side effects associated with the use of these latter agents.

Dr. Schultz is a graduate of Georgetown University School of Medicine and is chief of medical service of the Lee County Hospital in Opelika.

The pharmacology of guanethidine was first described by Maxwell, et al.,¹ who observed a profound hypotensive response from

USE OF GUANETHIDINE

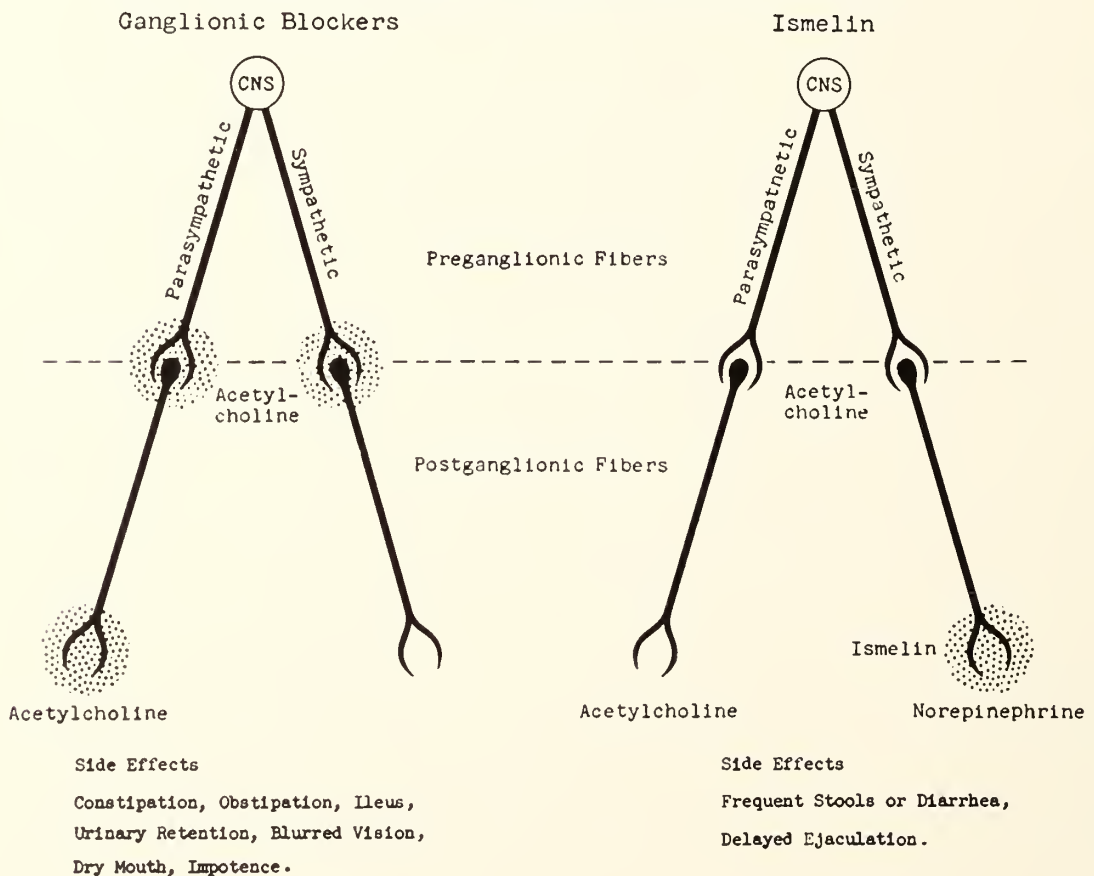
a single dose lasting 21 days in neurogenic hypertensive dogs. Of even greater interest was the observation that guanethidine acted at the myoneural-junction of the sympathetic nervous system without impairing the normal functions of the parasympathetic nerves. (See Diagram I)

Until recently, all agents of comparable potency were ganglioplegic, and their actions occurred in both the sympathetic and parasympathetic ganglia. The clinical usefulness of these ganglionic blocking agents was frequently limited in that the profound blockade of parasympathetic action caused severe and sometimes intolerable side effects, such as constipation, obstipation, ileus, urinary re-

tention, blurred vision, dryness of the mouth, and impotence. The severe alteration of intestinal motility accompanying the use of these drugs further complicated therapy by changing their absorption. Proper control of pressure was difficult, and the usual clinical course was characterized by the fluctuation of pressure from one extreme to the other.

Guanethidine is unique in that it does not interfere with the normal physiology of the autonomic ganglion but acts by interfering with the release of the neurohumoral mediator, norepinephrine, at the sympathetic nerve terminals. The parasympathetic system, which has acetylcholine as its mediator, is not affected by guanethidine.

DIAGRAM I: THE SITE OF ACTION OF ISMELIN AND GANGLIONIC BLOCKERS



USE OF GUANETHIDINE

It has been tentatively postulated² that this interference with norepinephrine release takes place by an initial dispersion of norepinephrine stored in the sympathetic nerve terminals and the inhibition of further manufacture of this substance within the nerves. This concept is in agreement with observations by Page,³ who described a transient rise in pressure and cardiac output after administering guanethidine by the intravenous route to dogs. This pressor effect is not observed in humans with oral administration of the drug.

This pressor effect is related, presumably, to the initial dispersal of norepinephrine. This concept of action is further supported by

Sheppard,⁴ who demonstrated reduced tissue levels of catecholamines after pretreating animals with guanethidine. Page and Dustan's report,² indicating the clinical effects of guanethidine to be those of an effective, potent, hypertensive agent which showed neither toxicity nor tolerance, was confirmed at a symposium on guanethidine,⁵ sponsored by the University of Tennessee, where such outstanding investigators as Mendlowitz, Culbertson, Maxwell, Imhoff, Frohlich, Richardson, Genest, Ford, Brest, Kirkendahl, and Maronde took part.

The most recent report by Page⁵ of patients treated chronically with guanethidine con-

TABLE 1
INDIVIDUAL RESPONSES OF PATIENTS TREATED WITH GUANETHIDINE ALONE

No.	Sex	Age	Supine BP Before Rx	Supine BP After Rx	Erect BP Before Rx	Erect BP After Rx	Supine Pulse Before Rx	Supine Pulse After Rx	Erect Pulse Before Rx	Erect Pulse After Rx	Weight Before	Weight After	Comments or Side Effects
1.	F	58	180/98	144/88	160/100	130/94	78	64	80	74	121	119	Disc. Went on Apres.
2.	F	54	186/120	154/98	170/120	130/100	96	60	108	76	207	201	Dizz. & Edema
3.	F	62	140/80	154/90	180/120	142/102	76	54	84	60	146	145	Occ. Headaches
4.	F	78	176/84	168/90	160/98	160/94	78	66	72	72	175	179	0
5.	F	60	150/100	150/82	114/94	118/80	94	66	94	78	155	157	Dizzy
6.	F	64	180/110	150/86	160/118	138/80	88	102	84	120	147	151	0
7.	F	68	178/104	152/100	162/110	136/100	84	72	90	84	172	173	Headache & Dizzy
8.	F	62	154/100	124/88	128/100	110/90	108	90	136	108	152	155	0
9.	F	61	174/104	160/100	150/114	144/96	78	72	108	88	152	147	Dizzy
10.	F	52	180/100	142/90	150/95	130/96	84	66	90	84	193	190	Dizzy & Diarrhea
11.	M	71	160/98	150/90	168/108	130/96	80	78	88	88	158	160	0
12.	M	40	170/110	146/88	130/108	132/94	72	68	78	84	186	182	0
13.	M	32	174/100	146/94	150/104	126/84	60	66	62	84	214	196	0
14.	M	69	170/90	150/88	150/92	120/90	54	66	72	84	236	239	Weak
15.	F	61	150/96	180/110	124/84	160/110	66	54	84	60	200	208	Dizzy & Edema
16.	M	50	180/138	200/130	230/140	184/140	78	72	88	90	226	239	Headache & Dizzy
17.	F	68	198/98	162/84	180/80	140/90	78	70	80	88	190	180	0
18.	M	47	230/130	160/100	210/140	144/110	84	78	90	96	130	138	0
19.	F	48	170/110	144/90	140/100	138/98	102	90	120	96	180	185	Dizzy & Headache
20.	F	43	150/96	150/96	140/104	134/100	90	90	96	108	189	192	0
21.	F	45	150/98	128/90	134/100	118/96	78	84	86	96	190	182	Slight Edema
22.	F	38	164/90	132/84	154/110	120/94	80	72	80	88	231	226	0
23.	F	59	190/100	162/94	170/104	148/104	78	60	84	60	109	111	Dizzy
24.	F	47	164/104	140/84	144/110	124/90	104	86	96	96	170	170	0
25.	M	42	200/100	150/100	180/108	140/104	84	72	88	96	190	196	Trans. Dizzy with Diarrhea

firms the importance and value of the drug to a physician treating hypertension.

Since guanethidine was used and tested by many outstanding clinicians and clinics, the purpose of this study was to evaluate the behavior of guanethidine alone and in combination with hydrochlorothiazide (Esidrix®, CIBA), in a general medical practice where patients and conditions differ significantly from those encountered in a research hospital environment.

In this particular study the purpose was not to determine how little or how much of the drug should be given; rather, the effort was made to determine a safe dosage for maintaining a lowered blood pressure with-

out inducing incapacitating side effects. The report concerns itself with the action of guanethidine alone and in combination with hydrochlorothiazide in a group of moderate and severely ill hypertensives selected from private practice.

Materials and Methods

Fifty patients, consisting of negro and white males and females ranging in age from 32 to 78 years with moderate to severe hypertension, were selected from private practice for the study. All of them had been under treatment for hypertension and were receiving one or more hypotensive drugs in addition

TABLE II
INDIVIDUAL RESPONSES OF PATIENTS TREATED WITH GUANETHIDINE AND HYDROCHLOROTHIAZIDE

Patient No.	Sex	Age	Supine BP Before Rx	Supine BP After Rx	Erect BP Before Rx	Erect BP After Rx	Supine Pulse Before Rx	Supine Pulse After Rx	Erect Pulse Before Rx	Erect Pulse After Rx	Weight Before	Weight After	Comments or Side Effects
26.	M	48	160/108	150/100	140/110	140/104	78	90	84	84	183	187	Increased Esidrix® to 50
27.	F	49	180/108	144/90	174/112	130/96	78	76	84	90	213	200	0
28.	M	40	190/124	142/94	180/130	130/96	102	78	120	84	214	202	0
29.	F	49	164/108	124/82	140/110	110/88	78	72	96	90	191	181	0
30.	M	32	180/110	130/94	180/110	124/98	84	78	96	84	273	249	Gassy with Diarrhea
31.	M	48	180/116	142/92	166/124	128/96	78	78	90	90	199	188	Much Imp. After 3 days
32.	F	72	170/110	130/74	146/96	120/84	68	60	74	76	185	180	0
33.	M	49	230/110	140/80	190/90	134/90	90	60	96	84	200	190	0
34.	M	66	170/98	150/84	174/104	160/94	84	78	84	90	200	201	Dizziness, Transient
35.	F	61	210/120	154/100	220/140	160/110	84	80	96	90	300	300	0
36.	F	60	200/140	180/90	190/100	160/90	74	66	78	78	166	161	0
37.	M	74	178/90	150/78	184/78	140/78	60	66	64	72	163	160	Trans. Dizziness
38.	F	39	160/96	134/86	150/106	124/92	108	60	96	74	208	206	0
39.	F	66	190/110	128/78	184/110	112/90	88	64	96	80	151	147	0
40.	F	38	178/110	144/100	160/108	140/108	90	90	94	104	265	278	0
41.	M	40	148/98	140/108	144/100	130/110	102	102	108	110	190	204	Dryness of the Mouth 1 Day
42.	F	49	160/96	144/94	144/96	132/94	72	68	84	78	187	180	0
43.	M	59	230/140	170/112	200/134	154/120	102	90	120	96	238	230	0
44.	F	58	260/178	238/134	240/180	162/120	78	66	80	72	169	169	Slight Dizziness
45.	M	57	180/110	140/88	200/112	124/84	78	66	90	78	194	195	0
46.	F	45	210/136	130/90	200/142	118/94	108	60	114	80	170	158	Occ. Dizziness
47.	M	58	190/110	144/104	170/118	120/90	90	66	96	90	163	161	0
48.	M	51	150/90	140/86	168/104	128/96	94	60	96	80	161	154	0
49.	M	54	240/132	188/108	230/152	140/96	96	60	102	78	208	194	0
50.	F	58	178/110	142/90	170/118	134/100	90	68	102	84	185	180	Trans. Dizziness

to a diuretic. Some of the patients were also receiving a digitalis preparation. The patients were divided at random into two subgroups. (Tables I and II)

Prior to the administration of guanethidine either alone or in conjunction with hydrochlorothiazide, all medications were discontinued in both subgroups, except for digitalis. The majority of these patients had been subjects of a recent evaluation and were fairly well versed in the procedures of noting onset of drug action and severity of side effects. They were also aware of the nature of their condition and were highly co-operative. A complete history and physical examination of each patient was a matter of record.

At each visit the supine pulse rate and blood pressures were recorded, and the patient then took a 15 minute rest period in recumbency. Next, the patient stood up and the pulse rate and blood pressure were recorded in the erect position. Patients were weighed at each visit and were carefully questioned as to how they felt and whether any side effects such as weakness, dizziness, diarrhea, or impotence were noticed. An attempt was made to assess the severity of such side effects—if they were noted.

As shown in Tables 1 and 2, one half of the patients were started on minimal dosages of guanethidine alone while the other subgroup received hydrochlorothiazide in addition to Ismelin.[®] Those patients receiving hydrochlorothiazide in addition to guanethidine were treated with the diuretic for one week prior to commencing guanethidine therapy.

All patients were given enough medication to last for seven days, at which time they returned for re-examination. After one month of weekly visits during which time dosage was adjusted as necessary, patients were allowed to remain away for two weeks, three weeks, and finally monthly intervals were permitted, provided there were no abrupt changes in the blood pressure or undesirable side effects.

In the event of severe blood pressure fluctuations, appearance of side effects or the need for dosage readjustment, they were

again seen weekly until stabilization occurred or the side effect disappeared.

Recent urinalysis in addition to electrolyte determinations had been obtained in the majority of cases. All these patients were considered to be in balance.

Initially most patients were started on the minimal dosage of Ismelin[®]—10 mg. daily. This dosage was increased weekly and in some cases was maintained throughout the six months of study. If side effects were noticed on the increased dosage, the last dose was reduced.

Results and Discussion

Ismelin[®] Alone

The patients treated with Ismelin[®] alone (Table I) consisted of seven men and 18 women with ages varying from 32 to 78 years. The average age of this subgroup was 55 years.

The individual responses to guanethidine can be found in Table I and the average findings in Table 3.

TABLE 3
AVERAGE BLOOD PRESSURE AND PULSE IN
TWENTY-FIVE PATIENTS TREATED WITH
GUANETHIDINE ALONE

	Before Guanethidine		After Guanethidine	
	BP	Pulse	BP	Pulse
Supine	172/103	82	152/93	73
Erect	157/106	90	136/97	86

While the average weight of the patients receiving only Ismelin[®] fluctuated very little, there were some interesting changes. Fourteen patients gained an average of 4.6 pounds, while ten patients lost an average of 6.2 pounds. One patient showed no change.

Dosage among those receiving only Ismelin[®] varied from 10 mg. daily to 75 mg. daily, but the average dose was 30 mg. daily. Only

USE OF GUANETHIDINE

TABLE 4

AVERAGE BLOOD PRESSURE AND PULSE RATE
IN 25 PATIENTS TREATED WITH
GUANETHIDINE AND HYDROCHLOROTHIAZIDE

	Before Therapy		After Therapy	
	BP	Pulse	BP	Pulse
Supine	181/114	86	149/94	72
Erect	178/115	94	134/97	85

seven patients required doses in excess of 25 mg. daily to achieve control.

Ismelin® and Esidrix®

The 25 patients treated with both guanethidine and hydrochlorothiazide ranged in age from 32 to 74 years, with an average age of 53 years.

Cardiovascular responses are presented in Table 4 as averages for the entire group. The individual responses can be found by referring to Table II.

The average body weight in this group decreased from 196.6 pounds to 194.5 pounds. Eighteen patients in the group lost an average of eight pounds; five patients gained an average of 6.6 pounds, while two patients remained unchanged.

The average dose of hydrochlorothiazide was 27 mg. daily when used with Ismelin®. Twenty-three cases were treated using a single daily dose of 25 mg., while two patients required 50 mg. daily. The requirements for Ismelin® were remarkably reduced in this group by the addition of hydrochlorothiazide, so that the average dose was only 21 mg. daily. Twelve patients were adequately controlled on 10 mg. daily; one required 20 mg. a day; nine required 25 mg. daily, while only three required amounts in excess of 25 mg. daily.

These figures for dosage are somewhat at variance with those stating that 50 mg. of Ismelin® per day is an average dose. The

difference is probably related to the severity of the hypertension being treated.

Results from this study indicate that the systolic and diastolic pressures were lowered in both the supine and standing positions with Ismelin®, or Ismelin® with Esidrix® (see Tables I and II). One of the fairly constant changes was a rise in the diastolic pressure from the supine to the standing position, as well as an increase in the pulse rate (Tables 3 and 4). None of the patients in either subgroup showed any marked tolerance or resistance to Ismelin®. It was noted, however, that those patients who were also taking Esidrix® stated that the diuretic effect of this drug seemed to decrease after three or four weeks of use. In two cases the dosage of Esidrix® was necessarily increased. Ismelin® seems to have a "hold-over" effect since in a few instances where patients did not report on their due dates and had been without medication for two or three days, pressures were maintained at controlled levels. On the other hand, those patients who were without medication for a week to ten days showed a marked rise in their pressures.

In the Ismelin® group one patient (No. 1) was unable to tolerate the drug. Whether this was imaginary or not is subject to question, for when placed on Apresoline®, she did very well without any further side effects. In only one case (No. 9) did the side effect of diarrhea and marked faintness occur. This was quickly remedied by stopping the drug for three days and then reinstituting therapy with the last lower dose. None of the other cases required any drastic dose changes. Although the heart rate appears to slow down in the supine position, it increases significantly on assuming the standing position. This was not the situation I encountered while working with the hydrogenated ergot alkaloids.⁵

Frolich and Freis⁶ noted nasal stuffiness, drooping of the eyelids, and impotence associated with the use of Ismelin®. With the exception of two patients who stated there was a degree of impotence, the latter side effect mentioned was not encountered in our

study. The other side effects mentioned by Frolich and Freis were not observed in our study, probably because we used lower dosages and increased dosage more slowly. Impotence has also been reported by several other investigators. However, in looking over their work, it appears that they too used higher dose levels. In fact, it is now the general consensus of opinion that all patients, excepting those with fulminating severe hypertension, should be started at a lower dosage level of Ismelin® with gradual increases until the optimum level of control is achieved.

The second portion of our study combined Esidrix®, a brand of hydrochlorothiazide, with Ismelin®. Esidrix® is an improved analogue of chlorothiazide, a diuretic with mild antihypertensive properties. It has been known for a long time that salt (sodium chloride) is related to the hypertensive process. Ambard and Bojar⁷ noticed this over 50 years ago. At a later date this was again re-emphasized by Allen and Sherrill.⁸ The thiazides generally cause an accelerated excretion of salt when administered, and this confirms the fact that sodium loss lowers blood pressure. This has been shown by the work of Friedmann⁹ and his associate, who noted that sodium and blood pressure are related. The how or why of the process still remains conjectural, but there is some evidence to suggest that increased levels of sodium within arteriolar walls increases the constrictive response of these vessels to norepinephrine.

As can be noted in Table II, many of the patients were obese; therefore, the addition of Esidrix® helped produce a rather consistent weight loss in addition to a drop in blood pressure. This is particularly evident when one compares the results with Ismelin® alone.

Other than an increased urinary output, none of the side effects such as diarrhea or impotence appeared in our study with the addition of Esidrix®. As a matter of fact, those patients who were also taking Esidrix®, especially those showing edema, were markedly improved both physically and mentally. The latter may possibly have been due to the loss

of fluid and weight. I could not say that the orthostatic hypertensive effects were increased in this series, although Ismelin® and Ismelin® with Esidrix® caused orthostatic hypertension in some patients. Those who did experience dizziness (hypertension) mentioned it as being mild and transient in nature.

It appears that the addition of Esidrix® to Ismelin®, especially in those patients with moderate to severe hypertension provides a definite advantage to the patient. It seems that not only are systolic and diastolic pressures reduced more quickly, but in the great majority of cases, the hypertension improves with weight loss through diuresis. Although one cannot make the above a definitive statement since each case of hypertension is individual—with individual problems, it seems to be fairly accurate. Moreover, the addition of Esidrix® to the dosage of Ismelin® appears to provide a smoother blood pressure control, especially in the supine position. Side effects observed with Ismelin® were significantly reduced when Esidrix® was added.

Summary and Conclusions

Fifty patients having moderate to severe hypertension, including renal, essential, and malignant types were treated with Ismelin® and Ismelin® and Esidrix®.

Ismelin® is shown to be a potent hypotensive drug, whose potency is increased with the addition of Esidrix®. There was no evidence of the development of tolerance to the drug. Ismelin® was found to have a slight cumulative effect and a prolonged duration of action. There were few side effects other than the orthostatic hypertension, which was easily controlled by halting all medication for a few days. One or two patients on Ismelin® alone developed ankle edema. However, when Esidrix® was added, the edema was well controlled. We noted that side effects can be kept minimal by initiating Ismelin® therapy using small doses and making small increments at weekly intervals.

While Ismelin® dosage varied from 10 mg. to 75 mg. in our series, 25 to 30 mg. daily

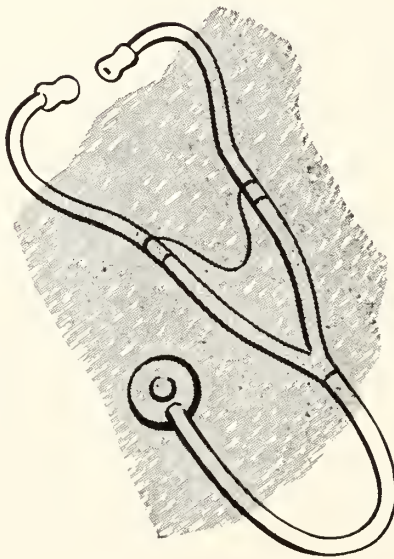
USE OF GUANETHIDINE

seems to control most cases, particularly with Esidrix®. From our accumulated evidence, Ismelin® is not only an effective anti-hypertensive in itself but can be substituted for other anti-hypertensives without loss of hypotensive effectiveness.

The specificity of action of this new compound on the sympathetic nerve terminals without altering the normal function of the parasympathetic nervous system provides potency comparable to ganglioplegic drugs while eliminating many of the side effects that made therapy with these latter compounds intolerable.

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Tuberculin And Histoplasmin Reactions On Adolescents In Wilcox County, Alabama

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Of the systemic fungus diseases present in Alabama, histoplasmosis is by far the most common. Based on individual skin tests, clinical reports, X-ray surveys and complement fixation studies the incidence of histoplasmosis appears to be higher in the northern part of the state. Two histoplasmin skin surveys on children in Alabama have been reported in the literature.^{1, 2} Other limited histoplasmin skin testing surveys have been performed among others by Manos et al³ on navy inductees from all states. From this data the relative percentages of infection were estimated in the individual states, including Alabama. The extent of histoplasmosis in Alabama has not been adequately studied, and this is particularly true in the southern counties.

Interest was revived in such a study by the occurrence of three cases of histoplasmosis in Dallas County in 1958, one being fatal.⁴ In 1960 advantage was taken of the opportunity

to skin test children in Wilcox County, which is south of Dallas County and is located in the southwestern lower area of Alabama. One white and one Negro school in Pine Level were surveyed using both tuberculin and histoplasmin antigens.

A commercial source of PPD tuberculin of intermediate strength (5 T.U.) was used. The histoplasmin antigen, suitably diluted, was furnished by the U. S. Public Health Service. The volar surface of the right forearm was used for the tuberculin and the left forearm for the histoplasmin. The dosage of both antigens was 0.1 ml intradermally and the resulting induration measured at the end of 48 hours. Any induration of 5 mm or over was considered positive for either antigen. The syringes and needles used for testing were kept separately for the two antigens.

Approximately three weeks after the intradermal skin tests were performed a sec-

TUBERCULIN AND HISTOPLASMIN

ond series of tests was performed on the white pupils using the Heaf tuberculin test. A small amount of Protoderm (Connaught PPD tuberculin) was smeared on the volar surface of the left forearm by means of a sterile tooth pick and the cartridge released over this area. Sterile individual cartridges were used for each child. The results were read after five and seven days. All reactions showing four or more raised areas were considered positive.

In April 1960, at the Pine Level white school, 322 pupils between ages six and 19 were tested. An additional 18 people were also included for a total of 340 tests. In the Negro school, 165 pupils were also tested from the ages of six to 19. Additionally, seven employees over 20 were also included. Three children under age three were tested but were non-reactive. They are not included in this data. Thus, a total of 172 subjects were tested in the Negro school.

Results

The age distribution, number tested and other data are shown in Table 1 for both tuberculin and histoplasmin skin tests. Excluding the 20 and over age group, 14.2 per cent of the white adolescents reacted to histoplasmin compared to 30.9 per cent in the Negro school. The overall percentage was

19.9 per cent positive. Only four children in the white school reacted to tuberculin and none was positive to both tuberculin and histoplasmin. The Negro children had seven tuberculin reactors (4.2 per cent), two of the subjects reacting to both histoplasmin and tuberculin. In comparing the Heaf test to tuberculin in the white school, four children were positive to both, two were Heaf positive and tuberculin negative and three were not available for reading.

Manos⁵ has described a method of expressing histoplasmin and tuberculin sensitivity as annual conversion rates. He assumed "that a constant conversion rate, unvarying with age and time, operates among those negative to histoplasmin up to about 18 years of age." The prevalence rate p is plotted against t (age) on inverted semi logarithm paper. A line drawn to the age axis approximating the established points will show the initial age (t_0) at which conversion first occurs (Figures 1 and 2) and can be used to estimate the annual conversion rate. The following formula is then used:

$$\text{Log}_e \frac{1}{1-p} = r(t-t_0)$$

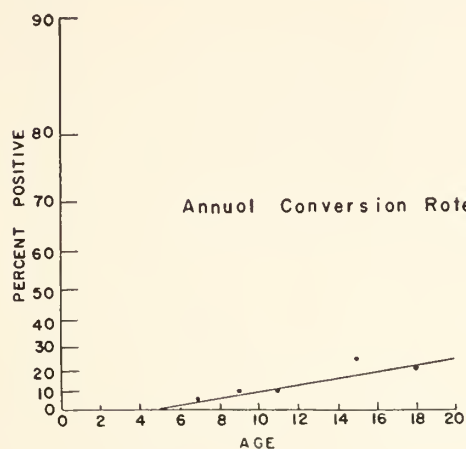
where t was chosen as age 19 in this computation. For example, if we consider the data shown in Figure 2 from the line at age 19 it would give a prevalence rate of 0.60 with an

TABLE I
HISTOPLASMIN AND TUBERCULIN REACTIVITY IN WILCOX COUNTY CHILDREN

White						Negro				
Age	Histo- plasmin+	%+	No. Tested	Tuber- culin+	%+	Histo- plasmin+	%+	No. Tested	Tuber- culin+	%+
6- 7	1	4.1	24	—	—	7	14.0	50	1	2.0
8- 9	5	8.8	57	—	—	4	20.0	20	3	15.0
10-11	6	8.8	68	—	—	11	52.3	21	1	4.7
12-13	7	14.0	50	—	—	12	34.2	35	1	2.8
14-15	11	24.4	45	2	4.4	11	36.6	30	1	3.3
16-17	11	19.0	58	2	3.4	5	62.5	8	—	—
18-19	5	25.0	20	—	—	1	100	1	—	—
Sub- Total	46	14.2	322	4	1.24	51	30.9	165	7	4.24
20+	13	72.2	18	—	—	5	71.4	7	—	—
Total	59	17.3	340	4	1.24	56	32.5	172	7	4.24

Figure 1

Percent Positive to Histoplasmin Intradermal Test by Age in White School



initial conversion age of 5.2 years. Substituting in the formula gives:

$$\begin{aligned} \log_e \frac{1}{1-0.60} &= r(19-5.2) \\ \log_e 2.50 &= 13.8r \\ \frac{0.91629}{13.8} &= 0.066 \text{ or } 6.6\% \end{aligned}$$

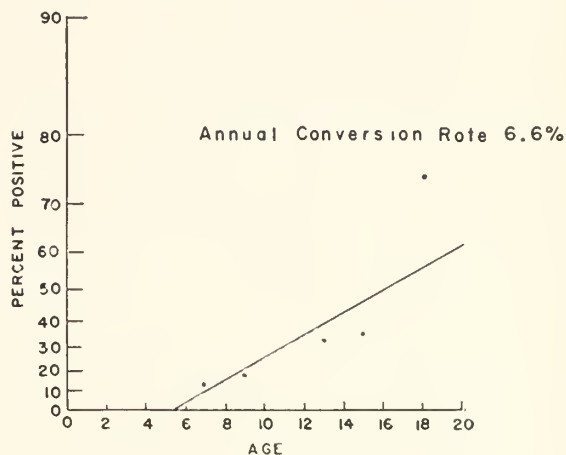
This mathematical approach results in annual conversion rates of 1.9 per cent and 6.6 per cent respectively for whites and Negroes. It may be seen in Figures 1 and 2 that the initial age of conversion to histoplasmin sensitivity is estimated as 4.9 years for white and 5.2 years for Negroes. The estimates of initial ages and conversion rates given, as well as the lines shown in Figures 1 and 2, were actually determined by Manos' method of weighted regressions. However, in most instances the visual method could be used, at least for first impressions.

Discussion

A previous publication of Manos et al³ divided the state into various areas based on histoplasmin reactors. Their estimate that between 10 per cent and 30 per cent of the inductees in Wilcox County were reactors appears to correspond with our data of 17.3

Figure 2

Percent Positive to Histoplasmin Intradermal Test by Age in Negro School



per cent and 32.5 per cent reactors in white and Negro adolescents respectively. However, the age of the navy inductees tested was in the 17 and above bracket. Our results in the same age group show the rates of 20.5 per cent and 75 per cent, indicating a much higher prevalence of histoplasmin reactivity in Wilcox County.

In Decatur, Pitt² found 19.3 per cent positive reactors to histoplasmin. Our data is not comparable to his since he considered only indurations of histoplasmin of ten mm or above as positive. In measuring the indurations on Wilcox County white adolescents, 43 per cent were in the 5 to 9 mm category, the other 57 per cent had reactions measuring from 10 to 20 mm. By contrast, in the Negro school only 12.7 per cent had indurations of 5 to 9 mm, the balance ranged from 10 to 40 mm. Comparing the Decatur data to Wilcox County white children gives percentages of 19.3 per cent and 14.2 per cent respectively. If the Negro and white children in Pine Level are considered together, the percentages are approximately the same as Pitt found in Decatur, 19.3 per cent to 19.9 per cent.

The Welch and Berrey¹ Birmingham survey was conducted on Negro and white. All would be considered as urban residents. They

found 4.4 per cent of the white pupils positive to histoplasmin while the Negro rate was much higher, 12 per cent. Their data is sufficient to determine annual conversion rates on the white children, approximately 0.7 per cent with a beginning age of conversion at 5.9 years. Conversion rates could not be determined for Negroes since no age breakdown was given. However, the degree of skin induration considered positive was not given by the authors.

The annual conversion rate of Manos⁵ presents a much better picture of what is occurring in the Wilcox area. It is obvious if conversion begins at a very early age that the sum total of histoplasmin reactors in an adult population will be sizeably higher than if this conversion began at a later age. Application of this mathematical method also minimizes the overall result of unusual sub groups within a population. This is quite evident in Figure 2 where the ten to 12 and 18 years old groups show extreme variance from the other age groups. In substance then, this method of approach lends itself ideally as a method of comparing conversion rates in any two or more areas.

Comparing the Birmingham white adolescent survey to the Pine Level white school demonstrates a conversion rate roughly 2.6 times greater than in Birmingham while the beginning conversion ages were approximately one year earlier in Pine Level.

The higher conversion rate in the Negro adolescent, 6.6 per cent versus 1.9 per cent in the white children, was unexpected. In this preliminary report the number of children tested in each age group was not taken into account in calculating rates. While the Pine Level area would all be considered as rural, many of the Negro children came from farms or fringe areas of the town. It was noted that many of the Negro families maintained chicken flocks. Whether or not this was conducive to increased infection is problematical.

The tuberculin reactivity of white children (1.2 per cent) in Pine Level was much lower than that of the Negroes (4.2 per cent). This

difference is consistently noted in other areas of the state.

There is not sufficient data here to compare the Heaf method to the intradermal tuberculin test. Only four adolescents reacted to both the Heaf and Mantoux tests, while two were negative to the Mantoux and positive to the Heaf. Unfinished data from another school we have tested by both methods (450 children) suggests a considerably higher sensitivity of the Heaf method. The specificity of such reactions is another problem, however. In our tuberculosis laboratory in 1960 we cultured some 32,000 specimens. From these specimens *M. tuberculosis* was isolated on 3,718 specimens, but 1,985 specimens yielded unclassified isolates which were chromogens and non-chromogens, many of which fell into Groups I through IV. The possibility of cross reactions in this state is quite obvious, especially where minimal reactions are encountered. We would, therefore, reserve judgment and suggest that before the Heaf test is accepted verbatim in Alabama a very considerable number of subjects be tested by both methods. It may possibly be used effectively as a screening method.

The Wilcox County survey should be considered only as a prototype for future histoplasmin testing programs. These surveys on adolescents should include white and Negro in rural and urban areas with special care to test only groups who have been lifetime residents in the community. Areas such as Montgomery and others have rather large military groups who usually stay only from one to three years. More intensive testing should be conducted in the southern counties and areas adjacent to other state lines. The value of such a completed program to public health officials and physicians is obvious. It is hoped these aims can be accomplished in the near future.

We wish to acknowledge our thanks to the public health nurses, school officials and people of Pine Level for their cooperation and assistance. Also, we acknowledge with appreciation the assistance of Dr. Myron J.

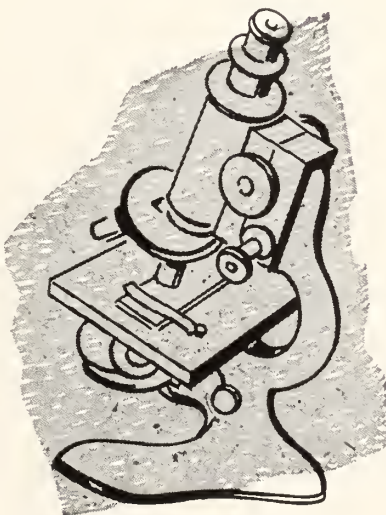
Willis, Communicable Disease Center, and Dr. Carroll E. Palmer, U. S. Public Health Service, for their statistical advice and criticism.

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The Need For Medical Education

In General Aviation

J. J. EGGSPUEHLER

Columbus, Ohio

General aviation in recent years has enjoyed phenomenal growth. This segment of civil aviation which includes all flight activities except those conducted by airlines, represents over a billion dollar industry. Businessmen, professional men, and people of all vocations have found that the airplane can increase their vocational activities while providing more leisure hours by cutting down on travel time.

Last year, pilots in general aviation flew some 13 million hours on the 76 thousand active aircraft in the fleet. It is estimated that 60 million passengers enjoyed the convenience of air travel afforded by the general

aviation industry. This represents 57 per cent of all passengers flown in civil aviation.

During this same period of time the airlines have added jet equipment to their fleets and have expanded their operations to reach the smaller communities in the country. Airlines have made our business world dependent on air travel. Military operations have been running around the clock for the defense of our country in addition to maintaining a massive retaliatory force.

This increase in aircraft operations throughout our aviation complex has resulted in the crowded airspace which we now share. Using this airspace has become more and more involved as greater numbers of aircraft have been introduced.

Add this to the rapid advances being made in aviation technology. The aircraft in general aviation has taken on new and impres-

Mr. Eggspuehler is director of Ohio State University's School of Aviation. Presented at the Alabama Academy of General Practice and the Alabama Flying Physicians' meeting on September 29, 1961 at Mobile, Alabama.

sive performance capabilities. No longer do we view the light aircraft as the "puddle jumper" limited to a range of a few hundred miles and used primarily for short distance trips. Today, some light aircraft in the hands of private pilots are capable of speeds in excess of 200 miles per hour. Operational ranges allow 2,000 mile trips in a single day and cruise performance in excess of 20,000 feet.

Navigational aids and communication facilities available to all pilots have added immensely to the safety of air travel. At the same time, these additions have imposed new demands on the pilot making use of this complex equipment. Civil Air Regulations over the years have developed into a maze of involved and voluminous rules changing daily as conditions warrant.

Reflecting on the changing times, we are struck with the many factors which suggest the need for higher standards in skill and knowledge of those pilots sharing this complex airspace. For if the pilots in general aviation fail to keep pace with the advances of the industry, a shocking safety record will most surely result. The addle-headed, the ignorant, the daredevil, or the unskilled cannot and will not survive the combined use of the crowded airspace as we have come to know it.

In general aviation, we have the greatest range of pilot skills and knowledge. We have the private pilot flying for pleasure, the highly skilled commercial pilot flying corporate aircraft, the duster pilot in agricultural operations, the student pilot seeking instruction, and many others too numerous to mention. In view of this, it is important that we examine those weaknesses in pilot capability which could be detrimental to the welfare of the pilots sharing this airspace, as well as the general public below. Pilots of all levels, like all physicians, continually face the problem of determining the essential knowledge in defining their individual limitations.

In order that we can categorize some of the needs of the general aviation pilot, we must

consider the factors involved in the act of flight. These factors are three in number and can be identified as the pilot, the environment, and the machine. For future reference, we shall abbreviate this to P-E-M.

The pilot factor in flight can be divided into two areas, physical and psychological. These areas would include the pilot's physical capabilities and limitations and his psychological attitudes.

The environmental factor includes weather, terrain, flight regulations, airport facilities, navigation, ground-based navigational aids, and communications.

Aircraft and equipment capabilities, characteristics, and limitations compose the machine factor.

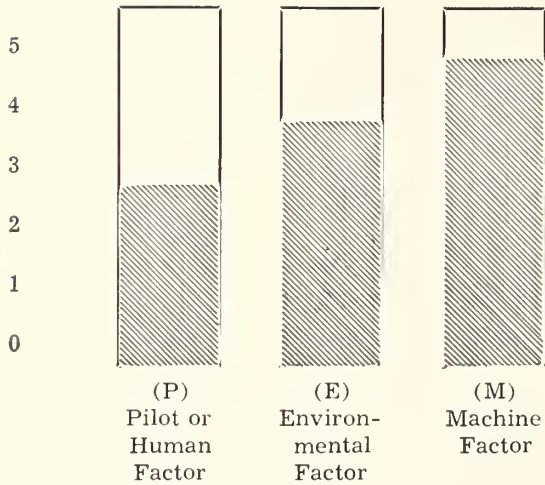
The pilot may be thought of as a decision-maker in the act of flight. Signals are conveyed to him through his various senses. These signals are conveyed to the brain and correlated with his existing knowledge of the subject and situation. Based on this information, the brain makes a decision and translates this decision into muscular movements to put the decision into effect. In the decision-making process the pilot is continuously evaluating the relationships existing between the three factors of PEM in terms of his current knowledge and experience. When viewed in this light, the pilot's decision can only be as effective as the information limit of any one PEM factor and its relationship to the other factors.

As an example, let us assume the following: Mr. 'X' is a businessman who operates his own light aircraft. During the several years he has been piloting aircraft he has accumulated several hundred flying hours and picked up assorted bits of information concerning weather, flight regulations, pilot skill, and proper use of his own machine. We can summarize Mr. 'X' by describing him in terms of the PEM factors on an arbitrary scale of knowledge from zero to infinity.

In the flight situation Mr. 'X' can function safely as long as the flight does not necessi-

MEDICAL EDUCATION IN AVIATION

Knowledge Level of Pilot or Human Factors	3
Knowledge Level of Environmental Factors	4
Knowledge Level of Machine Factors	5



tate a decision that requires more than his knowledge level of the subject and its relation to the other two factors. When the demands on the pilot require more knowledge than he has available, he can no longer completely correlate his knowledge of the other two factors. Thus, the possibility of the flight being placed in an unsafe condition becomes greater due to an unrealistic decision. In effect, Mr. 'X' has an overall operating limitation of three rather than five.

We may consider, for example, a case where a pilot encounters a line of thunderstorm activity. The situation suggests the advisability of climbing over the tops of the clouds to avoid the more vicious weather in and around the storm cells. In an unpresurized aircraft without oxygen, it becomes important that the pilot consider the consequences of going to higher altitudes for an extended period of time. Without knowledge of this important consideration, other factors may support a decision to climb to 16,000 feet or higher to pass over the adverse weather. The consequences of such an uninformed

decision could be disastrous. We can apply this same principle to all of the factors in flight and the resulting conclusion remains the same—safe decisions will be greatly enhanced with a satisfactory level and balance of knowledge of the factors involved in flight.

My concern is the apparent imbalance of these factors when considering the knowledge level of the human factor on the part of general aviation pilots.

If man is to function effectively and safely in our airspace with its increasing complexity, he must not only understand his environment and machine, he must certainly understand himself. He must utilize information concerning the physiological and psychological responses to the stresses of flight when making the decisions which continually occur in flight.

For those involved in the teaching of flight the emphasis, quite naturally, is on the environmental and machine factors. We cannot ignore the importance of a sound background in the principles of navigation, meteorology, and aircraft operations. But we have virtually ignored the importance of even a very rudimentary understanding of the human factor in our teaching function.

During the flight instruction process there is no point at which student pilots are required, or even encouraged, to become acquainted with the human factor in flight. Yes, some vague and meaningless comments are tossed about by the flight instructor such as "Be careful when you fly with a cold" or "Don't remain above 10,000 feet too long without oxygen." Such vague information, which oftentimes becomes distorted when communicated between lay persons, is of little value in making flying safer.

In military flight operations there is usually a reasonable degree of medical surveillance. In general aviation, medical surveillance is limited to the twelve to twenty-four month examination for a medical certificate. Unfortunately, this limited contact with the

medical profession does not lend itself to a satisfactory indoctrination of the medical aspects of flight, let alone any continuing educational program. Some mechanism must be established to impart that knowledge of the medical aspects of flight which would be valuable to pilots.

It is not the purpose of this presentation to suggest that we develop pseudo-physicians out of our pilots. Rather, it is to make known certain areas of knowledge which you doctors take for granted. To clarify this point, let us take for example the common cold. For years I have heard many cautioning remarks about flying when plagued with a cold. But in all honesty, such remarks brought about little concern. I had flown many flights while suffering from severe colds with little apparent discomfort. The response, therefore, was that I was evidently immune to any ear trouble. This past spring I had the misfortune of rupturing an eardrum while descending from only 7,000 feet. Subsequent to this incident, I learned of a simple little test to determine if the eustachian tubes are open. I regard this new knowledge extremely valuable not only to myself but to my future passengers.

It is most unlikely that a pilot will consult a physician everytime he takes drugs for medicinal purposes. The use of some medications which can be purchased without prescription—such as bromides—may impair flying efficiency to a dangerous degree. For this reason, it seems most appropriate that the lay pilot be indoctrinated in the possible harmful effects of these easily obtained drugs.

This interest in greater medical education motivated a search of the drugs which could have an adverse effect on pilot performance. It was most revealing to learn that some of the antibiotic group can be very dangerous to the airman public. Nasal decongestants are as common at our airport as the coffee cup during the cold winter months. The fact that indiscriminate use of these decongestants can cause tachycardia and nervous states, includ-

ing tremors and incoordination, is a worthwhile bit of knowledge to the general aviation pilot. In the case of depressants, it should be known that use of these drugs can be dangerous due to the individual responses which occur. The potential depressing effect this group of drugs have on the vestibular apparatus while decreasing depth perception should most certainly be known to every duster pilot as well as pilots doing less hazardous flying.

You might ask yourselves what confidence you have that duster pilots thoroughly understand the potential hazard in mishandling some of the chemicals of their trade. Some of the needless accidents and fatalities which are a part of our statistics in this segment of general aviation indicate a need for more education in toxicology. I'm afraid that too often we suggest caution in handling of certain chemicals in terms of "do not allow direct contact with the more dangerous chemicals." Although this in itself is true, to the man concerned with efficient handling and dispersing of these chemicals, shortcuts are an ever present temptation. Loaders and pilots alike after handling less toxic materials, fail to discriminate thoughtfully between those and the more lethal compounds. A calloused, less cautious handling may then creep into the operation. It is for this reason that such education cannot rest with the simple application of "do and don't" rules—it must be accomplished with an understanding of relative toxicities of our various chemicals, their characteristics, and effect.

We found in a recent survey conducted by our department that very few states require aerial applicators to demonstrate knowledge of the materials they handle and dispense. A healthy respect for toxic materials can only come with a thorough understanding of their lethal potential.

Fatigue is another factor which should be a part of any pilot decision as to the advisability of taking on another flight. In the case of a general aviation pilot deciding on a flight where a narrow tolerance for error exists, even a crude estimate of his fatigue

level could be valuable information in the decision of "go-no go." A pilot who is extremely tired and decides on an instrument flight with low ceiling and visibility at the destination, or the duster pilot who elects to treat another one hundred acres after ten hours of flying that day, should have the knowledge that such decisions can be devastating from the fatigue element alone.

A corporate pilot through experience has defined ceiling and visibility limitations for instrument approaches that he will use when deciding on the advisability of a particular trip. Generally, these limitations are based on weather conditions which the pilot feels he can competently and safely undertake. But, in addition, such guide lines are generally based on a performance capability without regard for any physical or mental limitations. Once limiting factors like this are introduced, however, the performance capability may be affected to the point where the pilot cannot adequately cope with possible emergencies.

As in the case of colds, use of drugs, or fatigue, consider for a moment other ailments, diseases or afflictions which could impair performance or cause serious physical damage when combined with flying. Knowledge of these physical and mental factors will have influence on the kinds and extent of flight activities with which one may become involved. To most general aviation pilots, however, these medical considerations are far removed from the problem of flight.

Equipment such as shoulder harnesses, first aid kits, and fire extinguishers are recommended to aircraft operations both large and small. We know that survival gear can save lives in cases of emergency in desolate terrain. But the lay pilot is yet to be convinced. Physicians can perform a needed service in this regard by explaining the possible consequences in failing to make use of safety equipment. Point out, for example, the high percentage of fatalities resulting from head injuries which could be reduced if widespread use of shoulder harnesses were accomplished.

The need for medical education in general aviation can be expressed in a number of ways. Of greater importance, however, is the development of a medical education program to correct this problem. To suggest that this task can be undertaken by the flight instructors throughout the country appears neither wise nor practical. Imparting knowledge of medicine by flight instructors may be accomplished by rote transfer but certainly not with a sufficient degree of understanding.

In the aviation ground schools we have some technically capable instructors but with little or no comprehension of the medical problems involved in flight. Discussions of drug characteristics and their effects, toxicology, or physical limitations do not appear to be the job of the lay ground instructor.

Legislation on medical matters related to flight has received increased attention in recent years. But the extent of these efforts has been a revision of Part 29 of the Civil Air Regulations on medical certificates and the reorganization of the designated medical examiners' program. The wisdom of these efforts is not in question, but it does leave much to be desired in an effective "grass roots" educational program. The job of getting this knowledge to the pilots cannot be accomplished through legislation alone.

The only persons capable of getting the kinds of information necessary to our pilots are the physicians of our country. No other group could adequately interpret medical considerations. We must depend on those men and women in the medical profession who are sufficiently interested in aviation to give of themselves for the benefit of our airman public. Accomplishing this educative task, unfortunately, lacks a clear-cut mechanism which would insure pilots the medical knowledge deemed essential and beneficial to their aircraft operation. There are means, however, by which it becomes possible for pilots to share your knowledge.

Flight clinics have had wide appeal to pilots as an opportunity to acquire new knowl-

edge and to share informative experiences with other airmen. Subjects such as meteorology, radio communications, tips on care and servicing of aircraft, and general principles of safety usually make up the program. To fail in such meetings to give time for discussion of the human factor in flying is grossly "missing the boat." The care and servicing of the body and mind is every bit as important as caring for the machine. I recently participated in a flight clinic in Ohio which was co-sponsored by the Ohio Flying Physicians. If I were to suggest one discussion area which was missing from the program, it would be a topic which our physician sponsors could have provided.

Various printed media are an excellent way in which pilots can benefit from the physician's point of view. Some physicians, such as Dr. John Flynn, of New York, have written excellent articles which you may have read in our aviation periodicals. We most certainly need more coverage of the medical aspects of flight in future magazine issues as one step in reaching all pilots. Many of you, I am sure, could communicate your contributions to good advantage through your state aviation newsletter.

Participation by the family doctor in such a program is most essential to assure for pilots as much contact as possible with the medical profession. Surely it is the responsibility of any doctor treating a known pilot to prescribe drugs with caution and to give counsel on physical limitations which these drugs may impose. We cannot depend on the designated medical examiners with their limited contact with individual pilots to assure preventive or continuing health programs. This obligation should and must rest with the doctor who knows his patient best.

We cannot discount the value of the typical airport hangar discussions as a means by which local pilots can share a physician's

views. Just as the flying doctor enjoys discussions with flight instructors or other pilots on flight techniques, so could the pilots benefit from your professional knowledge. This mutual exchange could be most beneficial to all concerned.

If we accept the argument that some knowledge of the medical aspects of flight is important to all pilots, it follows that some questions in the pilot written examinations should be devoted to this subject. The nature of such questions may be very elementary. It would, however, motivate prospective pilots to seek out such knowledge from any available source. Recommendations to the Federal Aviation Agency as to the nature and extent of questions devoted to this area of knowledge should properly come from the medical profession. If, through written examinations, we could motivate pilots to learn specific areas of medical knowledge we may find it an effective mechanism. Of ultimate importance, however, is to make pilots of all degrees of experience aware of the medical considerations most helpful to their individual needs. The mechanisms to accomplish the job appear to rest heavily on the medical profession.

It would be a bit presumptuous of me to suggest to you doctors that this is your responsibility. Some may feel a moral responsibility to do whatever they can to upgrade the level of knowledge on the part of general aviation pilots. Some may feel that the press of their practices would not permit more than superficial participation in such a program. Regardless of your response to this need, I should like to leave with you this consideration: If the medical profession fails to assume a more active role in the education processes in general aviation, it is unlikely that this job will be accomplished. For if you will not do it—nobody else will.



Editorials

A R E S O L U T I O N

WHEREAS, The Board of Medical Examiners of the State of Alabama is made up of the duly elected representatives of the Medical Profession in Alabama; and

WHEREAS, The Medical Profession of Mobile County is proud of the Board's long record of dedicated and unselfish service to the profession and to the people of Alabama; and

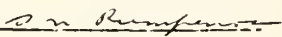
WHEREAS, The members of the Board have frequently rendered services requiring loss of time from home and busy practices, inconvenience, personal expense, and at times personal embarrassment; and

WHEREAS, The members of the Board have been in the courts of our City all this week waging our battle for the welfare of the people of Alabama; therefore, be it

RESOLVED, That this Society go on record as approving the judgment and wisdom of the Board of Medical Examiners and at the same time express its gratitude and appreciation for the sacrifices made by members of the Board throughout the years in their effort to maintain and improve the standard of medical care in Alabama.

RESOLVED, That a copy of this resolution be sent to each member of the Board of Medical Examiners and that a copy be printed in the State Medical Journal.

Signed,


President

Attest:
Adopted in Regular Session
Mobile, Ala., 17 Aug. 1951


Secretary-Treasurer

The ten members of the State Board of Censors act in three capacities: As a State Board of Censors, as a State Board of Medical Examiners, and as a State Committee of Public Health. Each of these represents a grave responsibility vested in the elected representatives of the Association.

As a Board of Censors these ten men are the guardians of organized medicine.

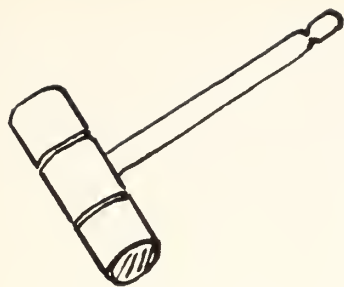
As a Board of Medical Examiners they are charged with the responsibility of seeing that

only qualified practitioners are permitted in Alabama.

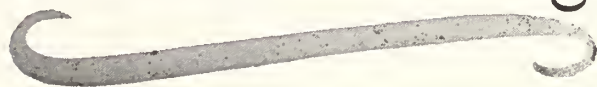
As a Committee on Public Health they are the bond between the private practice of medicine and that field of medicine best administered by the State.

The ten censors are compensated only by the satisfaction of discharging a sacred duty.

The above resolution is eminently timely and proper.



President's Page



Most of us have read a good deal about the need to improve, in the minds of the public, "the image of the doctor." This is an important aspect of our public relations and should remain in our thinking. However, certain aspects of our practical relations also remain with us and need to attract our attention. The conduct of our public health service in Alabama is placed by law in our state and county associations. The law also provides means of paying for personnel and other expenses. For these matters we are dependent upon the legislature and its members. The demand for properly trained personnel is steadily increasing as more and more needs are developed. So as to secure the proper personnel, it is becoming more and more important that the regulations governing salaries of personnel under state civil service be changed to fit present day needs. These changes will have to be made by legislative action.

It is a fact that certain suggestions regarding changes have been offered to the legislature, particularly in reference to raising the limitations on salaries of key members of the public health staff, including the health officer. However, it is also a fact that very little vital interest in these improvements has been shown by the physicians of the state. I am sure this is true because they are not aware of the urgency of this problem. All of you are requested to inform yourselves about this matter through the county society officers and then to discuss the needs with local members of both houses of the legislature. During the time when they are not in active session is an excellent time for this approach. Please do your utmost to secure

relief for this situation which is quite serious in relation to future conduct of our Public Health Department. It is more serious now because of the early establishment of measures for care of our aging population, many details of which will be handled by this department.

In the near future a committee of the State Association will report on its relative value study. This has been a controversial matter, it is true; but this committee has worked very hard and will present a comprehensive report. This effort deserves the careful attention of each of us. Again, we are confronted now with certain influences which perhaps are not of our choosing. Yet we must realize that we are facing some hard facts of life, and we will be better off if the solution of these difficulties is carefully studied by those of us who furnish the medical care rather than by others. It will require careful study of the facts as they now exist to develop this good solution. We cannot do it by any methods which approach it otherwise. We know how to solve our financial problems with our individual patients. We are now faced with the question of solving by ethical and medical methods, based upon medical decision not third party ones, the problems of medical care of certain groups of our patients. They are still our patients, and they are looking to us for care.

John W. Simpson, M. D.



ORGANIZATION SECTION

Transactions of the Woman's Auxiliary to the Medical Association of the State of Alabama, Thirty-Seventh Annual Convention

Part Two

SECOND GENERAL SESSION

The Second General Session was called to order by the President, Mrs. John Morris, at 9:15 A. M., April 28, 1961, Hotel Stafford.

Mrs. Morris gave the invocation.

Guests—Mrs. William Mackersie, President, Woman's Auxiliary to the American Medical Association, and Mrs. Kalford Howard, President, Woman's Auxiliary to the Southern Medical Association—were introduced.

Roll was called by the Secretary with 65 voting delegates present. Twenty-two counties were represented. A motion to dispense with the reading of the minutes was passed.

Mrs. Earl Brandon, Tuscaloosa, gave the second report of the Credentials Committee: 178 members registered, 39 board members, 34 delegates, 11 alternates.

The Recording Secretary read the following recommendations from the Executive Board:

I. "That the budget be accepted as read." (Mrs. John Slaughter read the proposed budget for 1961-62.)

Motion carried.

II. "That the State Auxiliary make a \$100 contribution to the American Medical Education Foundation."

Motion carried.

III. "That the two following revisions as presented by Revisions Committee be included in the by-laws:

Motion carried.

1. ARTICLE I, SECTION I, MEMBERSHIP: That the following be added, "Membership in the Auxiliary to the Medical Association of the State of Alabama may be restricted only upon instructions from the advisory committee of the Medical Association."
2. ARTICLE VII, SECTION 26: The Article reads now: "The Committee on the Auxiliary to the Student American Medical Association shall consist of Chairman and Co-Chairman, appointed by the President and Executive Committee of the Jefferson County Auxiliary. The Chairman shall serve as a regular member of the State Board." The Revision would delete the following words, "Shall consist of Chairman and Co-Chairman" and would add to the last sentence, "The Chairman or in her absence the Co-Chairman shall serve as a regular member of the State Board" making *Article VII, Section 26* to read as follows: "The Committee on the Auxiliary to the Student American Medical Association shall be appointed by the President and Executive Committee of the Jefferson County Auxiliary. The Chairman, or in her absence the Co-Chairman, shall serve as a regular member of the State Board."

Motion carried.

IV. "That the General Assembly ratify the action of Mrs. A. D. Henderson in placing \$800 from the cash balance on hand of the Lettie Daffin Perdue Fund in a savings account."

Motion carried.

ORGANIZATION SECTION

V. "That Mrs. John Chenault be recommended to the National Auxiliary for elective office."

Motion was unanimously carried; and the new President, Mrs. Wm. A. Cunningham, was directed to send the letter of recommendation.

Mrs. J. R. Horn, Bessemer, reported that the handbooks had been revised and would be in the hands of the printer shortly. They will be available at the Fall Board Meeting and will cost Auxiliary members 50c each.

Mrs. John Morris called for a report of the Lettie Daffin Perdue Fund Committee composed of Mrs. L. H. Clemmons, Cullman; Mrs. A. D. Henderson, Mobile; and Mrs. H. Price Edwards, Birmingham. Mrs. L. H. Clemmons reported that the committee recommended that the Lettie Daffin Perdue trust fund be discontinued and the remaining net fund of money be assigned to the Woman's Auxiliary of the Mobile County Medical Society to be used for educational purposes.

Motion carried.

The following correspondence from a sub-committee of the Joint Legislative Council presented by the Women's Christian Temperance Union was read by the Secretary:

"Chemical Test Bill for those driving while under the influence of alcohol.

"This is a model bill with a permissive clause. Representative L. W. Brannon of Baldwin County will introduce this bill in the 1961 Alabama Legislature. Will your organization join with us on this sub-committee by endorsing this bill?"

Motion was made to endorse the bill.

Motion was made to amend the motion by adding "Subject to the approval of the Advisory Committee of the Medical Association of the State of Alabama."

Motion as amended carried.

The President called for the election of the Nominating Committee, 1961-62. Those elected were: Mrs. John Morris, Cullman; Mrs. James Guin, Jr., Tuscaloosa; Mrs. Wm. Salter, Anniston; Mrs. Joe Campbell, Birmingham; and Mrs. William Baston, Mobile. Tellers were Mrs. Leslie Johnson and Mrs. William Noble.

Mrs. W. D. Anderson, Convention Chairman, gave her last report and announced that a luncheon and fashion show would be held in the Rose Room of the Hotel Stafford at 1:00 P. M. She thanked convention committees and expressed appreciation for all cooperation.

Mrs. George Newburn, Mobile, gave a report of the Nominating Committee. Officers nominated for 1961-62 are as follows:

President-Elect: Mrs. John Kimmey, Elba, Coffee County.

District Vice Presidents: Northeast: Mrs. W. R. Sutton, Blountsville; Northwest: Mrs. Wm. D. Anderson, Tuscaloosa; Southwest: Mrs. Curtis A. Smith, Mobile; Southeast: Mrs. John W. Webb, Jr., Montgomery.

Recording Secretary: Mrs. Robert T. Cale, Jefferson-Bessemer.

Treasurer: Mrs. James F. Crenshaw, Birmingham.

Historian: Mrs. Sim Penton, Montgomery.

They were elected.

Mrs. W. M. Salter, Anniston, was elected a director from the past-president's group.

Mrs. W. A. Cunningham appointed the following to serve on the Executive Board: Mrs. H. Price Edwards, Corresponding Secretary; Mrs. Oscar Dahlene, Finance Officer, and Mrs. John Chenault, Parliamentarian. She announced that the new directors will be Mrs. John Morris, Mrs. George Newburn, and Mrs. W. M. Salter.

Mrs. Morris then called for an election of delegates to the National Convention. Those elected as delegates were Mrs. John Morris, Cullman; Mrs. John Kimmey, Elba; Mrs. M. T. Hunt, Boaz; and Mrs. Walter Brower, Birmingham. Those elected as alternates were Mrs. Robert Nelson, Tuscaloosa; Mrs. R. A. Dillard, Birmingham; and Mrs. R. K. Wilson, Aliceville.

The President announced the results of the Essay Contest. First award, Miss Mary Rissie Bass; second, Mr. Larry Grant; and third, Mr. Andy Collins.

Mrs. John Morris introduced Mrs. Kalford W. Howard, President, Woman's Auxiliary

to the Southern Medical Association who spoke to the assembly.

Under the direction of Mrs. Wm. A. Cunningham, Membership Chairman, annual reports of County Presidents were continued. Mrs. T. K. Lewis was timekeeper.

Vice-President, Northwest District, Mrs. J. O. Brooks.

Mrs. Brooks called on the following counties:

COUNTY REPORTS CONTINUED

Cullman County

We have 14 members, observed Doctor's Day, contributed \$5 per member to AMEF, had a mental health program, and are sending three students through nurses' training.

Jefferson—Bessemer

The Bessemer Auxiliary has thirty members, one new one this year, and 100 per cent membership of the doctors' wives. In addition to our President, we have on the State Executive Board the Recording Secretary and the Revisions Chairman. We had our State President visit us at one of our meetings which was our pleasure. And this year, for the first time in about five years, we entertained with a guest tea. Among our guests were the President-Elect; the State Treasurer; and Mrs. Thuss, the National Vice-President. We also invited as our guests the widows of doctors who live in Bessemer but are not now members of our Auxiliary. This tea was most successful and was considered a good community service project. The Bessemer Auxiliary feels a little unique in that we are an auxiliary to a group of doctors who are not organized locally. Our doctors belong to the Jefferson County Society, Birmingham, but do not get together as a Bessemer Association. Therefore, we feel that the two times each year that we get our doctors together for a social gathering is most worthwhile. This is done in March with a Doctor's Day Dinner and in May with a family picnic. At our request, the Mayor of Bessemer proclaimed March 30 as Doctor's Day, and our Auxiliary gave each doctor a red carnation to wear for the day. As a unit, our Auxiliary is not too active in local activities; but as individuals, we are so very active. We have members on the Library Board, the Women's Club House Board, the PTA Council, etc. We work and play in the special class rooms with the handicapped and the retarded children. We are active in many civic and social clubs.

Jefferson—Birmingham

The Jefferson—Birmingham Auxiliary feels a great satisfaction for a most rewarding year. Our

aims were two: I. Stress good relations among our own group. The following are a few of the methods we used:

1. We gave a Medical Musical, a play we had to repeat two times. Our cast was made up from Auxiliary members and members from the Medical Society. A coffee was given following the first performance, and several hundred people were served. The Medical Musical not only served as a means of promoting better relations but raised most of our AMEF Funds—total AMEF Fund, \$2,-620.07.

2. Our programs were planned with the thought uppermost in our minds to create better relations, as well as to be informative. A coffee preceded each meeting.

3. A most successful Box Supper was enjoyed by members and their husbands. Proceeds went to the Nurses Loan Fund. We gave three \$300 Nurse Loan Scholarships, one \$100 Medical Student Loan, and two \$500 Nurse Scholarships—a total of \$2,000.

4. A Fun Costume Party was given for members and their husbands at one of our country clubs.

5. The Christmas Coffee, with outstanding entertainment, was a highlight of the year.

II. Good public relations.

1. Members were encouraged to bring their friends to the Medical Musical.

2. We collected sample drugs for the geriatric program. These drugs were used at the George Eaves' Clinic.

3. We contributed \$108 to the After Care Service for ex-mental patients. This check was given in honor of our husbands on Doctor's Day.

4. We planned a program, "Poisons in Our Homes," for both county and city P.T.A.s.

5. We obtained a list of students from different high schools in our county who are interested in health careers. We invited these students, along with their parents, to a special program to acquaint them with this particular field. This was done on two occasions, and refreshments were served each time.

Last, but by no means least, we made an effort to give members, who were not on the Board, an opportunity to participate in as many of the activities of our Auxiliary as possible.

Marion County

The Marion County Medical Auxiliary has a membership of eight members. We averaged 100 per cent attendance at each meeting. Our main project each year is furnishing a \$500 nursing scholarship to a student who would otherwise be unable to attend nurses' training. We are now ready to begin our third student in training for this year. One student graduated last September; another student is in her second year of training, and the third student will begin this fall. The

ORGANIZATION SECTION

highlight of this year was a visit from our State President. A luncheon was given in her honor in March. Our county donated the requested contribution to AMEF. Red carnations were distributed to all doctors on Doctor's Day. Two benefit bridge parties were given to raise money for AMEF. We also entertained with a Christmas party in December. Booklets on "Health Careers in Alabama" have been distributed to all high schools in the county.

Morgan County

The 40 members of the Auxiliary to the Morgan County Medical Society have spent a very interesting year studying different phases of mental health. We hope that the programs have stimulated interest in mental health and some concrete project will develop in the future. We have contributed to the local Boys Club, the Girl Scouts, and the District Tuberculosis Sanatorium. In February our Auxiliary assisted our Medical Society in entertaining the visiting doctors and wives during the North Alabama Heart Association's scientific meeting. In connection with our study of mental health we were one of the co-sponsors of the Family Life Conference held in Decatur in April. A party was sponsored at Bryce. We gave \$100 to AMEF.

Pickens County

We have eight members. We began the year with a visit from our State President, which helped us to get off to a good start. Our Doctor's Day observance was a successful dinner party, with special honor being given to the oldest doctor in the county. We have had three special projects this year: (1) contributing two books on health to the Public Library, (2) sponsoring a student nurse, and (3) checking the hearing of elementary and high school pupils. This is our second year to carry out this project, and it has been very rewarding. The parents appreciate it; and we feel that if just one child is benefited, it is well worth our time and effort. We have gained one member this year.

Tuscaloosa County

Tuscaloosa has increased its active membership from 64 to 68 and its associate membership from 7 to 13, a total increase of 10 members, giving a total membership of 81. A Coffee was given in advance of our regularly scheduled business, luncheon meetings to which all doctors' wives were invited, with wives of new doctors being honor guests—this to stimulate interest in membership in our Auxiliary. We have worked diligently in all fields of Auxiliary endeavor; and our committee chairwomen have done excellent jobs with AMEF, Health Careers, Legislation, Doctor's Day, Essay Contest, Community Service, Safety and Defense, and Mental Health. All have contributed services to our community. The one unique activity of the year about which I shall report was a Coffee given in the recreation room at the Druid City Hospital School of Nursing by our group. To this were invited 250 women—two rep-

resentatives from each woman's club in the county. There were displays for each of our committees as you can see in the pictures here. These pictures appeared in our local paper. Over 100 women attended. The League of Women Voters requested that we allow them to collect Poll Tax from anyone who might be interested in paying. This was done. A tour of the Nursing Home was made by guests, and the student nurses participated in this. We felt that our community learned a great deal about the work of the Auxiliary from this effort. For the first time our Auxiliary is host to the State Convention—a challenge but, indeed, a pleasure.

Vice-President, Southeast District, Mrs. John Kimmey.

There are seventeen counties in the district, seven organized and ten unorganized. Numbers of letters were written but no response. We are planning a District meeting in Dothan next Fall.

COUNTY REPORTS CONTINUED

Coffee County

There are ten members of the Coffee County Auxiliary, two of whom live in Elba and eight in Enterprise. Our members have served with the Crippled Children's Clinic. One of the members will serve as chairman of the Preschool Clinic this May, and the other members of the Auxiliary will assist her. We have worked individually with United Appeal and other civic drives during the year. We hope that sometime we can undertake a worthwhile project as a group, but until then we will continue to serve in any capacity we can in the life of our community. We observed Doctor's Day, sponsored a party at Bryce, and contributed 100 per cent to AMEF.

Covington County

During the Auxiliary year 1960-61, Covington County had 21 members. One of our charter members, Mrs. B. C. Stewart of Opp, passed away in September, 1960. We have had four meetings this year, with an average attendance of 12. Our programs have been outstanding—informative and interesting. Civil defense, safety and atomedics have been included in our programs. Covington County Auxiliary was represented at the Regional Civil Defense Meeting, and our auxiliary agreed to participate in any local Civil Defense projects. We have also worked with the local Mental Health unit through schools, City Council, and Mental Health Association. In January, Covington County Medical Auxiliary was host at luncheon to the doctors of the county and the dentists' wives when Dr. Hugh MacGuire of Montgomery spoke on atomedics. Covington County Auxiliary has served lunch to the state bloodmobile staff each time it has visited Andalusia. We have met our AMEF quota. Our county doctors were honored on Doc-

ORGANIZATION SECTION

tor's Day. A red carnation boutonniere was sent to each doctor to wear on that day, and flowers were placed on the graves of the deceased doctors of the county. Our scholarship student is finishing her second year at Mobile Infirmary, and we have another nursing scholarship offered for the coming year.

Houston County

We have 44 members—one member-at-large. AMEF contributions totaled \$40. "Today's Health" was placed in libraries of county schools. On Doctor's Day we had a dinner dance and gave carnations to the doctors. In the field of mental health we sent a Christmas box to Bryce and attended the Family Life Conference. We had an outside speaker who talked on problems of underprivileged children. Community Service included Preschool Clinic with Service League, Crippled Children's Clinic, some work in Health Clinic every week.

Montgomery County

I would like to mention two things that the members of Montgomery County Auxiliary have done this year. The first was not a project of great planning, but it demonstrated the spirit of our group. When the recent flood hit our area, it was brought to my attention by one of our members that the local Salvation Army greatly needed volunteer help in sorting and distributing the mountains of clothing received by them for the flood victims. A great many of our 108 members rallied to the call; and due to the fine effort of our Auxiliary as well as many other organizations, 1,125 families in Montgomery and the immediate vicinity were supplied with their clothing needs.

The other thing that I would like to tell you about is the way Montgomery County pays tribute to our doctors on Doctor's Day. One of the aims of the Auxiliary is to promote good fellowship among physicians' families. We feel that we accomplish this aim to a great extent when we get together to work up a skit to entertain our husbands at our Doctor's Day Dinner Dance. We get to know one another better and have a wonderful time, as you can see from the pictures on this poster. We particularly try to get our new members to participate in the skit. Our skits are usually take-offs on the medical profession, and the doctors seem to enjoy laughing at themselves and each other. The pictures represent only a small number taking part, but it will give you an idea of the frivolity that kicks off a most enjoyable evening. After the skit, we dine and dance and generally promote good fellowship.

Southwestern District:

Escambia County

Our membership is 14 with three of these being new members. We hold our monthly meetings with the Medical Society and a guest speaker is invited each time. Once a year we have a very special meeting to which the physicians and wives

of surrounding counties are invited. The speakers are from teaching hospitals. We have been hostesses to very large groups. Due to our scattered distribution over the county, this type of meeting has been more successful than anything tried previously. We feel honored that our husbands have always included us. Not much is accomplished as an Auxiliary, but the fellowship is wonderful.

Mobile County

Eight regular monthly luncheon meetings were held with an average attendance of 60 per meeting. Total membership for the year is 178 with 151 active and 27 associate members. Included in the associate membership are the wives of the residents and interns from the Mobile General Hospital and the wives of the doctors from the Brookley Air Force Base Hospital. Our projects for the year were many. We made bandages which totaled into the thousands for the Cancer Society. These are used by the visiting nurses on terminal indigent cancer patients. We worked with the Tuberculosis Association in the mailing of the Christmas Seals and with the Red Cross, some of the members working enough hours with the blood program to earn their Red Cross pin. Monthly letters were placed in all the senior high schools in the county from the Mental Health series, "Milestones to Marriage." The film, "Helping Hands for Julie," was shown many times in the schools throughout the county and to other youth groups. The booklet, "Health Careers in Alabama," was distributed to all junior and senior high schools and to public libraries in Mobile County. We observed Doctor's Day by pinning red carnations on our doctor husbands at our three hospitals, and we remembered the ill and retired doctors with hand-painted cards of appreciation. Later we will honor our doctors with a dinner. Our philanthropies were as follows: Fifty dollars to each of the three nursing schools in Mobile, fifty dollars to each of the two schools of medical technology and to the school of X-ray at the Mobile Infirmary, ten dollars to the Lettie Daffin Perdue Scholarship Fund, ten dollars to the local United Fund, and thirty-three gift subscriptions of Today's Health Magazine to libraries and schools. Last but not least, \$545.50 went to the American Medical Education Foundation. This was raised by many and varied means—through AMEF memorials, Christmas card sales, individual and auxiliary contributions, and by a dessert-bridge with fashion show in December. The latter was the most successful fund raiser of all. We have had a fine year and look forward to an even better one next year.

Conecuh County

We have been inactive, but have plans for action next fall as a one-county Auxiliary with four meetings a year.

Mrs. John Morris introduced Mrs. William Mackersie, President of the Woman's Auxiliary to the American Medical Association,

ORGANIZATION SECTION

who installed the following officers for 1961-62:

President: Mrs. William A. Cunningham, Birmingham.

President-Elect: Mrs. John Kimmey, Elba.

District Vice-Presidents: Northeast: Mrs. W. R. Sutton, Blountsville; Northwest: Mrs. William D. Anderson, Tuscaloosa; Southwest: Mrs. Curtis A. Smith, Mobile; Southeast: Mrs. John W. Webb, Jr., Montgomery.

Recording Secretary: Mrs. Robert E. Cale, Jefferson-Bessemer.

Treasurer: Mrs. James F. Crenshaw, Birmingham.

Historian: Mrs. Sim Penton, Montgomery.

Mrs. John Morris presented the President's pin and gavel to Mrs. William A. Cunningham. Mrs. W. G. Thuss, Sr., presented the Past-President's pin to Mrs. John Morris. Mrs. William A. Cunningham made her inaugural address. She then introduced the committee chairmen for 1961-62 as follows:

American Medical Education Foundation—Mrs. Seaburt Goodman, Jefferson.

Archives and Exhibits—Mrs. Lowell H. Clemmons, Cullman.

Civil Defense—Mrs. T. K. Lewis, Morgan.

Community Service—Mrs. Harmon Stokes, Houston.

Health Careers—Mrs. James Guin, Tuscaloosa; Co-Chairmen—Mrs. Sam D. Davis, Tuscaloosa; Mrs. Gordon Ross, Jefferson.

Legislation—Mrs. Winston A. Edwards, Elmore.

Members-at-Large—Mrs. James E. Cameron, Tallapoosa.

Memorial—Mrs. Chester Beck, Pike.

Mental Health—Mrs. William Noble, DeKalb.

Press and Publicity—Mrs. Kellie N. Joseph, Jefferson.

Program—Mrs. Ira Patton, Blount.

Rural Health—Mrs. J. P. Brooke, Jefferson-Bessemer.

Revisions—Mrs. Julian Howell, Dallas.

Safety—Mrs. James Gaba, Marion.

SAMA—Mrs. R. A. Dillard, Jefferson.

WAMASA Editor—Mrs. Wilmot Littlejohn, Jefferson.

WAMASA News Circulation—Mrs. Harry E. Caldwell, Jefferson.

Special Projects: Essay Contest—Mrs. William J. Rosser, Jefferson.

Yearbook—Mrs. Don E. King, Jefferson; Co-Chairman—Mrs. Samuel Cohn, Jefferson.

Bulletin—Mrs. John Holley, Covington.

Woman's Auxiliary to Southern Medical Projects—Mrs. George Newburn, Mobile.

The meeting was recessed until luncheon at 1:00 P. M.

Mrs. Robert Nelson, President, Tuscaloosa County, presided at a luncheon at the Stafford Hotel in honor of Mrs. William Macker-sie and Mrs. Kalford W. Howard.

Invocation was given by Mrs. Joseph Dur-rett, Tuscaloosa.

Mrs. Nelson introduced Mrs. John Kimmey, President-Elect for 1961-62, Mrs. William Cunningham, President for 1961-62, and Mrs. John Morris, out-going President. Mrs. George Newburn as chairman of the Awards Committee (composed of Mrs. William Noble, Mrs. Harry Caldwell and Mrs. Newburn) presented Achievement Awards. Montgomery County gave the award money in memory of Sylvia Rosen. First award went to Coffee County; second, Pickens County; and third, Jefferson-Birmingham.

Mrs. Otis Jordan, State Chairman on Ar-chives and Exhibits, presented the Hobby Show awards to Dr. Bill Daniel, Photography; Mrs. Robert Oliver, Handcraft—Women; Dr. J. Henry Hollingsworth, Handcraft—Men; Mrs. W. O. Romine, Creative Art; and Jack Jackson, Children's Award.

Guests were introduced as follows: Mrs. Arthur E. Brown, Area Chairman of AMEF; Miss Camille Bush, reporter from "Graphic"; Mrs. James D. Partlow; Mrs. D. O. Mc-Cluskey; Mrs. Mackersie; and Mrs. Howard.

Mrs. William Cunningham introduced the officers for 1961-62.

Mrs. William G. Thuss introduced Mrs. Wil-liam Mackersie who gave the main address.

The luncheon was highlighted by a fashion show presented by Louis Weisel, Inc. of Tus-caloosa.

Mrs. Cunningham announced that the Post-Convention Board meeting would be held im-mediately following adjournment.

The meeting was adjourned.



ASSOCIATION FORUM

THE PRICE OF TB CONTROL

Despite substantial advances in diagnosis and therapy of tuberculosis as a disease, the basic problems of tuberculosis control have remained relatively unchanged over the years. The magnitude of the problem of control has changed, but its nature is the same. Prevention of infection with its consequent disease and death is still the goal in the United States, and no short cuts to this goal have been discovered. The old road of isolation of infectious cases, plus treatment and education of the patient and his contacts to minimize the spread of infection is still the highway to the elimination of tuberculosis as a public health problem.

New infections still occur

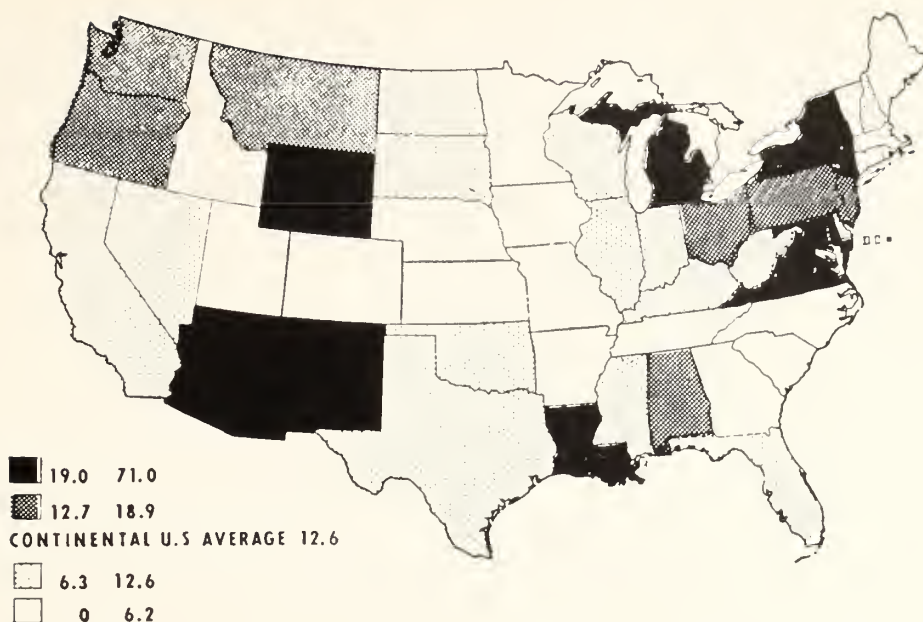
Currently, the bulk of new cases is apparently developing in people with old infections rather than new ones. Nevertheless, eventual elimination depends on stopping new infections. Obviously, if new infections are stopped, in the future there will be no old infections. There is good evidence that new infections in the United States have been substantially reduced in number and in rate, but is this enough?

The accompanying map gives some idea of the amount of infection recently spread to children. It shows new active tuberculosis cases reported during 1958 in children under five, on a rate basis. The map actually is a gross understatement of the new infection rate in this age group: many infections do not progress to disease, and the amount of infection is probably several times the amount of disease reported.

There is good reason to suspect that many of the infections spread recently to children under five will persist and develop into reportable cases for many years to come. We are fairly sure that new infections occur most frequently in areas where case rates are high. At the moment that infection takes place, the continuance of this preventable, communicable, and chronic disease is assured.

Why so little concern?

What seems worth wondering about is why there is so little concern about this situation. Do we reserve all our moral indignation about the resigned or callous attitudes toward disease and death for faraway places that we can designate as underdeveloped? What do



Tuberculosis Cases in Children under Five Reported in 1958.

we value more highly than the prevention of a disabling and deadly disease that we know to be preventable? These, of course, are slanted questions.

Actually, it does not seem appropriate for official agencies and voluntary associations supported by the public to control tuberculosis to take a detached attitude in this matter. Can such agencies be satisfied with anything less than complete control? Why this indecision?

Some points of indecision about tuberculosis control are easily discernible.

Areas of indecision

1. The belief that although tuberculosis is a communicable disease, it is not so communicable that isolation of all cases is deemed a necessity. The belief that the risk of the spread of tuberculosis is more tolerable than infringement of individual liberty.

2. The belief that privately treated cases do not concern the public. How many health departments receive regular reports of the progress of cases under private care?

3. The belief that the effort required for keeping track of the patient as he moves from

suspect to diagnosed case and from one form of treatment to another isn't worth it.

4. The belief that the cost of tuberculosis control should be borne by the patient if at all possible.

5. The belief that tuberculosis needs to be controlled only in persons with legal residence in various public health jurisdictions and that non-residents can be ignored.

6. The belief that it is cheaper to wait for tuberculosis to develop and then deal with it or neglect it than it is to prevent infection through tuberculosis control.

7. The belief that control is undemocratic, inhumane, bureaucratic, and unneeded.

8. The belief that patients must accept hospital treatment or be dismissed from health department concern.

Where we have failed

These are a few of the most common points of indecision about tuberculosis control. Undoubtedly, many people are infected each year by people who do not know they have tuberculosis in a communicable stage; others are infected by people whose doctors know they have tuberculosis, although the health

department does not; and still others are infected by persons who have been reported to the health department as tuberculous. When infection occurs in the last two types of situations, the health department or the medical profession has failed. If we believe in health department control of tuberculosis, each case of medical profession failure is also a case of health department failure. When infections result from exposure by a person who does not know he has tuberculosis, it is appropriate to ask why he did not know. If he was ever known to the health department or a physician as a case or as a suspect or as a contact, can we claim infection was unavoidable?

Experts now believe we can eliminate tuberculosis, not by waiting for it to burn itself out, but by the use of widespread chemotherapy as a public health measure. They believe this prospect of elimination may wane if not pursued promptly and vigorously. The challenge is whether we can control tuberculosis without coming to decisions about

matters which have impeded control in the past. Can we hope to speed up control by doing less than obligating each state health department to create a statewide system—a system which provides assurance that each suspect and contact is promptly investigated and that each case is placed and kept in isolation, under adequate treatment, or under surveillance?

Vigorous leadership needed

Briefly, it comes to this—tuberculosis can be controlled if it is regarded as important enough by leaders in the field of public health. In a specialized society preoccupied with many other concerns, vigorous leadership is required. Leadership which waits for a clear, clarion demand for action from the man in the street simply isn't leadership these days and accomplishes little. Public health leaders must lead.

Reprinted from the Bulletin of National Tuberculosis Association.

OUR REPUBLIC— BULWARK AGAINST THE TYRANNY OF MAJORITIES

Senator Margaret Chase Smith, Maine

We talk a great deal about our American government being a democracy. It is said that we fought two World Wars within a generation to "make the world safe for democracy."

Yet, do we know what we are talking about?

You may be surprised to know that our government is not a true democracy. It is a republic. If you doubt this, take a look at the Constitution. Try to find the word "democracy" or "democratic." Then take a look at Article IV, Section 4, which says, "The United States shall guarantee to every State in this Union a Republican Form of Government. . . ."

If you read the first ten amendments to the Constitution, these amendments being more popularly recognized as "The Bill of Rights," you will see that they directly flout the theory of democracy.

Now what is the difference between a democracy and a republic—what are we instead of what some of us think we are?

A democracy is a truly representative government in which the supreme power is retained by the people and exercised by them. So is a republic. But a republic, such as ours, is a restricted and limited democracy.

The basic distinction between democracy and republic is in the degree of majority

rule. Majority rule is unrestricted in a democracy while it is restricted in a republic.

"The Bill of Rights" part of our Constitution places definite limitations on the power of the representatives of the people. They are denied the power to abridge our freedom of speech, right of assembly, press, trial by jury, against unreasonable searches and seizures, and other individual rights—regardless of how much the majority might be opposed to such individual rights. Under a pure or true democracy, there is no protection of such individual rights against the rule of the majority.

Democracy actually means unrestricted majority rule that our Constitution so carefully prohibits. We are inclined to think of democracy in the social sense rather than in the political sense. We think of it as signifying equality among human beings. This ideal we do find expressed in the Declaration of Independence with the statement that "all men are created equal." But the ideal is even more basic than the Declaration of Independence. It is in reality the Christian concept of the Golden Rule.

So that there is good reason to distinguish between democracy and political democracy. By the sheer unrestricted rule of the majority of a political democracy, social democracy

could be killed without any protection whatsoever to the minorities.

A republic is a truly representative government. It provides representation for the minority as well as the majority. It places individual freedom and rights above majority rule. If we were really a political democracy, instead of the republic we are, the will of the majority would habitually ride roughshod over the will of the minority. A republic creates and develops tolerance that acts as a bulwark against tyranny by the majority.

The United States Senate, in which I have the honor to serve, is striking proof that our government is not a democracy but a republic. New York with a population of several million people has no more representation in the Senate than my State of Maine which has a population of less than a million people. Both states have two Senators each. This is a check against unlimited majority rule for the protection of the "minority population" states.

In short, a republic rather than a democracy is the American way simply because this country was settled and founded upon the love for liberty and individual freedom. Our republic protects our very rights to our beliefs even though we be in the minority. It protects differences of opinion.

around the state



DR. JOSEPH MARION DONALD

JOSEPH MARION DONALD LECTURESHIP ESTABLISHED

The Alabama Chapter of the American College of Surgeons will dedicate their annual meeting this year to the late Dr. Joseph Marion Donald. At the Tuscaloosa meeting on January 19-20, the first Joseph Marion Donald Lecture will be delivered by Dr. James T. Priestly, professor of surgery at Mayo Foundation Graduate School and the University of Minnesota. He will lecture on "Surgical Consideration of Obstructive Lesions of the Biliary Tract."

Dr. Donald was born in Monterey, Alabama, July 19, 1903. He graduated from the University of Alabama in 1921 and continued his medical education at Tulane University School of Medicine graduating in 1925. Dr. Donald spent two years at Charity Hospital in New Orleans then went to Mayo Clinic for training in general surgery.

In 1932 Dr. Donald began his practice in general surgery in Birmingham. He contributed much to the Hillman Hospital and con-

tinued his interest and association with it throughout his career.

Dr. Donald served as president of the Alabama Division of the American Cancer Society; was a member of the Southern Medical Association, and past chairman, Section on Surgery; diplomate, American Board of Surgery; member of the International Society of Surgery, American Surgical Association; and past president of the Jefferson County Medical Society. A Fellow of the American College of Surgeons since 1934, he was a member of the Board of Governors from 1949 to 1958 and of the Board of Regents from 1958 to 1961. Dr. Donald was clinical professor of surgery, Medical College of Alabama at the time of his death.

During World War II Dr. Donald served with distinction in the European Theatre of Operations as lieutenant colonel, and chief of the surgical service, 317 Station Hospital, United States Army.

Dr. Donald was a credit to his profession. He is sorely missed. To the world, the nation, and medicine, his loss is immeasurable. To us his friends, he is irreplaceable.



LAWRENCE REYNOLDS, M. D., 1889-1961:
AN APPRECIATION

Dr. Lawrence Reynolds died in Detroit, Michigan, August 17, 1961 of a coronary occlusion. In his death, Alabama and the medical profession have suffered the loss of a friend and benefactor.

A native Alabamian, he attained fame in his chosen field of Roentgenology. Dr. Reynolds was from a long line of physicians. Both his father and grandfather were physicians, as well as his two brothers.

He was graduated from the University of Alabama in 1912, and was awarded his Doctor of Medicine from Johns Hopkins four years later. He was awarded an LL. D. by the University of Alabama in 1950.

Many honors were conferred on Dr. Reynolds during his lifetime but he obtained his greatest satisfaction from his lifelong hobby as a collector of rare books. He amassed one of the finest collections in this country of historical masterpieces of medical literature. In 1958 he gave this collection of books and rare scientific manuscripts to the University of Alabama Medical Center. It is now housed in the Reynolds Library in Birmingham, Alabama. It was his desire to further the education of the young physician which prompt-

ed this gift for he saw in it a means of promoting medical progress. This library will serve students of medicine for generations to come.

The inscription on the plaque of dedication marking the entrance to the rooms that house this exemplary collection eloquently expresses Dr. Reynolds' philosophy that prompted this truly exceptional gift.

*"Here are housed the books collected and
loved by
Lawrence Reynolds
Physician, scholar, and philanthropist*

The official dedication ceremony of the Reynolds Library was held on February 2, 1958, but the more meaningful dedication will come from you who read these books.

Each time one of you reaps from the great minds of the past the desire for finer achievement in your profession and nobler development of your own character.

The Reynolds Library will have been re-dedicated".

Howard L. Holley, M. D.



MEDICAL CENTER NEWS



OFFICERS OF NEW ALUMNI GROUP—Four Birmingham physicians were elected officers of the new alumni association of the Medical College of Alabama at its organizational meeting. From left are Dr. Carl Dietz, president, Dr. Lonnie Funderburg, treasurer, Dr. Ed Waldrop, president-elect, and Dr. Tom Bolding, secretary.

New Medical Alumni Officers

The second medical alumni association of The Medical College of Alabama was formed recently. The new group will be composed of graduates of the four-year school. It will not replace the previously formed alumni group that was composed primarily of graduates of the medical school when it was located in Mobile.

Four Birmingham physicians were elected officers of the new alumni group. They are

Dr. Carl Dietz, president; Dr. Ed Waldrop, president-elect; Dr. Tom Bolding, secretary; and Dr. Lonnie Funderburg, treasurer.

Dr. James R. Garber and Dr. E. B. Carmichael were named honorary members for their assistance to the organization. Dr. Carmichael is a member of the faculty, and Dr. Garber is retired from a similar post.

Dr. Garber outlined some possible goals of the organization. He reminded the doc-

tors of special qualities needed in the medical profession with emphasis on "persistency and resoluteness."

Speaking on the school's progress during the past 15 years, Dr. Robert C. Berson, dean of the medical college, noted projects which are either under construction or on the drawing boards or in the planning stages, stressing the need for funds to make them actualities.

He said the quality of graduates of the school as well as the quality of incoming freshmen "is improving slowly but definitely showing yearly improvement."

PSYCHIATRIC UNIT TO MOVE THIS SPRING

The 100-bed Psychiatric Unit Hospital, approved by Alabama voters in the 1960 bond issue, came a step closer to reality with the announcement that the outpatient clinics of University Hospital will be moved to the recently purchased Roberts & Son Building.

The announcement came from Dr. Frank A. Rose, University of Alabama President. The University purchased the property from Roberts & Son at a price of \$397,056. In the transaction a mortgage was assumed, and additional funds were borrowed from the Birmingham Trust National Bank. The per-square-foot building cost was \$5.60, and the land cost was \$4 per square foot.

Plans to develop and expand the 100-bed Psychiatric Unit make it necessary to move all or a major portion of the outpatient facilities now located in the Outpatient Clinic Building to the Roberts & Son Building, Dr. Rose said.

"We believe this piece of property located at 19th Street and Sixth Avenue, South, is of great importance to the University at the present time and will be of increasing usefulness in the long-range development of the Medical Center," Dr. Rose added.

Matthew F. McNulty, Jr., University Hospital Administrator, said that the building will offer University Hospital space for criti-

cally needed functions and will immeasurably improve service to the people of this community.

Roberts & Son is scheduled to move into its new quarters March 1, 1962.

SMOLIANS HONORED

The newly completed psychiatric clinic in the University of Alabama Medical Center will be named for Mr. and Mrs. Joseph Smolian of Birmingham, whose generosity made possible the construction of the building.

Plans to name the clinic for its benefactors were announced recently by Matthew F. McNulty, administrator of University Hospital.

In making the announcement, he said a bronze plaque with this inscription will be affixed to the building:

"This clinic building is named in honor of Joseph and Bertha Smolian, whose humanitarian spirit and generosity made possible its establishment through their farsighted leadership and support. They gave substance to a vital facility dedicated to the treatment of those who are ill and to the advancement of health education and research."

The idea of a separate psychiatric clinic at the University Hospital was first conceived about six years ago by Dr. Elmer Caveny, who was then director of the psychiatric department at the Medical College.

Upon learning of Dr. Caveny's project and that two-thirds of the cost of the building could be obtained under the Hill-Burton Act, Mr. and Mrs. Smolian devoted \$100,000 to the Medical College.

Although University officials wanted the clinic named for its chief benefactors, Alabama law prohibits the naming of such establishments while the benefactors are still living.

Last summer, however, a joint resolution was passed by the Alabama Legislature to enable the University to name the clinic for Mr. and Mrs. Smolian.

DR. HARRISON HONORED

Dr. Tinsley R. Harrison, professor of medicine and director of the cardiovascular division, department of medicine, was a recipient of the Gold Heart Award of the American Heart Association at the annual meeting of the Association held in Miami Beach in October.

GORGAS SCHOLARSHIPS

All officers of the Gorgas Scholarship Foundation of the University of Alabama were re-elected at the annual meeting of the Gorgas Scholarship Foundation recently.

Dr. Emmett B. Carmichael is chairman of the Foundation. Other officers are Dr. James L. Kassner, Thomas A. Gearhart, and Herman Granbury, vice chairmen; S. Eason Balch, secretary; and William J. Rushton, II, treasurer.

Five Birmingham men were elected to one-year terms on the board of trustees. They are Parks Scott, Glenn Ireland, William J. Cabaniss, John B. Kopp, and Mortimer Jordan.

The Foundation discussed ways to encourage high school students to participate in the science contest sponsored annually by Westinghouse Electric Corporation and Science Service. It is from entries in this competition that Gorgas Scholarship winners are selected.

This year scholarships have been increased. Each recipient receives his tuition plus the following: First place, \$1800; second place, \$1350; third place, \$900.

DEATH CLAIMS MARC CLEMENT

Mr. Marc Ray Clement, Tuscaloosa attorney and civic leader, died of a heart attack on September 15. Mr. Clement was a leading political figure in the state and generally supported candidates advocating strong health measures. His work in anti-tuberculosis and mental health fields was very well known. He received the State Medical Association's William Crawford Gorgas Award in 1959.

GRANTS RECEIVED

Four members of the University of Alabama Medical Center staff have received grants totaling \$2,102,437 from the National Institutes of Health.

Dr. Robert C. Berson, Dean of the Medical College of Alabama, received \$1,970,819 for a seven-year program in clinical cardiovascular research.

Dr. John A. Balint, assistant professor of medicine, received \$60,051 (\$14,051 first year and \$11,500 for four additional years) for a study of pancreatic function after subtotal gastrectomy.

Dr. Robert D. Francis, associate professor, department of microbiology, received \$35,105 (\$12,315 first year and \$11,395 for two additional years) for a study of soluble antigens.

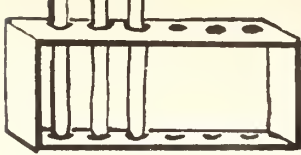
Dr. Homer C. Jamison, assistant professor of dentistry, was awarded \$36,462 (\$19,306 for first year and \$18,156 second year) for a study of applications of electronic computers in dental research.

HEALTH COUNCIL RE-ELECTS OFFICERS

Dr. J. Garber Galbraith, clinical professor of surgery and chairman of the section of neurosurgery, has been re-elected to a third term as chairman of the Health Council of Birmingham and Jefferson County.

Others elected at the Council's annual meeting last month were Dr. George A. Denison, professor and chairman, department of preventive medicine and Jefferson County Health Officer, first vice-chairman; Matthew F. McNulty, Jr., University Hospital Administrator, second vice-chairman; and Mrs. Gilbert Vaughn, secretary-treasurer.

Elected to the executive board for a one-year term was Dr. John Bryan. Those elected to serve a three-year term include Dr. Polly Ayers, Dr. Howard Harlan, Mrs. R. W. Lackmond, Henry S. Lynn, and H. F. Singleton.



STATE DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

September 1961

Examinations for malaria	13
Examinations for diphtheria bacilli and Vincent's	170
Agglutination tests	467
Typhoid cultures (blood, feces and urine)	491
Brucella cultures	1
Examinations for intestinal parasites	2,742
Darkfield examinations	3
Serologic tests for syphilis (blood and spinal fluid)	31,353
Examinations for gonococci	2,010
Complement fixation tests	114
Examinations for tubercle bacilli	3,363
Examinations for Negri bodies (smears and animal inoculations)	161
Water examinations	2,472
Milk and dairy products examinations	4,185
Miscellaneous examinations	3,712
Total	51,257

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	Aug.	Sept.	*E. E. Sept.
Tuberculosis	109	126	155
Syphilis	152	108	120
Gonorrhea	387	321	334
Chancroid	7	2	4
Typhoid fever	0	1	6
Undulant fever	0	0	2
Amebic dysentery	4	4	1
Scarlet fever and strep. throat	19	66	24
Diphtheria	4	7	19
Whooping cough	3	10	23
Meningitis	6	17	8
Tularemia	0	0	0
Tetanus	1	4	3
Poliomyelitis	1	3	24
Encephalitis	0	3	2
Smallpox	0	0	0
Measles	27	12	27
Chickenpox	19	1	5
Mumps	8	10	15
Infectious hepatitis	123	126	25
Typhus fever	0	0	3
Malaria	0	0	0
Cancer	608	613	452
Pellagra	0	1	0
Rheumatic fever	22	14	10
Rheumatic heart	20	38	15
Influenza	18	35	43
Pneumonia	134	121	105
Rabies—Human cases	0	0	0
Pos. animal heads	6	3	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

BIRTH AND DEATH STATISTICS FOR JULY, 1961, AND COMPARATIVE DATA

Live Births Deaths Causes of Death	Number Registered During July 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live births	7,043	4,385	2,658	25.1	25.0	26.0
Deaths	2,434	1,598	836	8.7	8.3	8.1
Fetal deaths	146	67	79	20.3	22.8	22.7
Infant deaths—						
under one month	161	101	60	22.9	22.3	20.4
under one year	209	111	98	29.7	30.0	29.5
Maternal deaths	6	2	4	8.3	5.6	12.4
Cause of Death						
Tuberculosis, 001-019	19	13	6	6.8	11.2	8.4
Syphilis, 020-029	7	2	5	2.5	2.2	1.8
Dysentery, 045-048	1		1	0.4	0.7	0.7
Diphtheria, 055	1		1	0.4		
Whooping cough, 056	2		2	0.7		0.7
Meningococcal infections, 057						0.4
Poliomyelitis, 080, 081	1	1		0.4	0.4	1.1
Measles, 085						
Malignant neoplasms, 140-205	332	242	90	118.3	105.7	101.1
Diabetes mellitus, 260	26	17	9	9.3	10.5	15.7
Pellagra, 281	1	1		0.4		0.4
Vascular lesions of central nervous system, 330-334	351	208	143	125.0	124.1	114.3
Rheumatic fever, 400-402					0.4	0.7
Diseases of the heart, 410-443	818	571	247	291.4	260.9	277.5
Hypertension with heart disease, 440-443	113	51	62	40.2	46.2	48.6
Diseases of the arteries, 450-456	44	32	12	15.7	15.5	18.6
Influenza, 480-483	1	1		0.4	1.1	0.4
Pneumonia, all forms 490-493	44	23	21	15.7	16.2	19.0
Bronchitis, 500-502	2	1	1	0.7	0.7	0.4
Appendicitis, 550-553	4	2	2	1.4	1.4	0.4
Intestinal obstruction and hernia, 560, 561, 570	14	9	5	5.0	5.8	2.6
Gastro-enteritis and colitis, under 2, 571.0, 764	8	1	7	2.8	3.6	4.0
Cirrhosis of liver, 581	17	13	4	6.1	5.4	4.4
Diseases of pregnancy and childbirth, 640-689	6	2	4	8.3	5.6	12.4
Congenital malformations, 750-759	26	17	9	3.7	2.4	4.2
Immaturity at birth, 774-776	57	34	23	8.1	7.6	8.0
Accidents, total, 800-962	187	125	62	66.6	74.0	55.1
Motor vehicle accidents, 810-835, 960	75	56	19	26.7	33.9	22.6
All other defined causes	368	237	131	131.1	133.5	113.9
Ill-defined and unknown causes, 780-793, 795	97	46	51	34.6	33.6	36.1

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

October 1961

Examinations for malaria	9
Examinations for diphtheria	
bacilli and Vincent's	153
Agglutination tests	440
Typhoid cultures (blood, feces and urine)	446
Brucella cultures	6
Examinations for intestinal parasites	2,896
Darkfield examinations	3
Serologic tests for syphilis	
(blood and spinal fluid)	25,830
Examinations for gonococci	2,010
Complement fixation tests	94
Examinations for tubercle bacilli	3,983
Examinations for Negri bodies (smears and animal inoculations)	166
Water examinations	2,682
Milk and dairy products examinations	4,523
Miscellaneous examinations	3,947
Total	47,188

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	Sept.	Oct.	*E. E.
			Oct.
Tuberculosis	126	89	174
Syphilis	108	117	171
Gonorrhea	321	365	342
Chancroid	2	1	3
Typhoid fever	1	3	6
Undulant fever	0	0	2
Amebic dysentery	4	0	2
Scarlet fever and strep. throat	66	41	65
Diphtheria	7	0	25
Whooping cough	10	0	23
Meningitis	17	5	6
Tularemia	0	0	1
Tetanus	4	1	3
Poliomyelitis	3	0	21
Encephalitis	3	0	1
Smallpox	0	0	0
Measles	12	21	35
Chickenpox	1	3	6
Mumps	10	11	25
Infectious hepatitis	126	125	59
Typhus fever	0	1	1
Malaria	0	0	0
Cancer	613	727	458
Pellagra	1	3	0
Rheumatic fever	14	22	8
Rheumatic heart	38	20	13
Influenza	35	2	55
Pneumonia	121	100	145
Rabies—Human cases	0	0	0
Pos. animal heads	3	3	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA

AUGUST 1961

Live Births	Number Registered During August			Rates* (Annual Basis)		
				1961	1960	1959
Deaths	Total	White	Non-White			
Causes of Death						
Live Births	7,340	4,568	2,772	26.1	26.5	28.0
Deaths	2,278	1,429	849	8.1	7.9	8.6
Fetal deaths	155	64	91	20.7	21.7	20.9
Infant deaths—						
under one month	180	97	83	24.5	21.8	19.9
under one year	237	110	127	32.3	30.0	27.2
Maternal deaths	5	1	4	6.7	8.0	7.6
Cause of Death						
Tuberculosis, 001-019	17	9	8	6.1	8.3	7.3
Syphilis, 020-029	10	3	7	3.6	1.1	1.1
Dysentery, 045-048					1.1	1.1
Diphtheria, 055						0.4
Whooping cough, 056						
Meningococcal infections, 057	3	2	1	1.1		0.7
Poliomyelitis, 080, 081						
Measles, 085					0.4	
Malignant neoplasms, 140-205	345	238	107	122.9	117.3	124.9
Diabetes mellitus, 260	40	27	13	14.2	10.5	10.2
Pellagra, 281						0.4
Vascular lesions of central nervous system, 330-334	322	212	110	114.7	98.9	123.8
Rheumatic fever, 400-402	1		1	0.4	0.4	2.2
Diseases of the heart, 410-443	692	463	229	246.5	259.4	281.1
Hypertension with heart disease, 440-443	177	89	88	63.0	40.4	53.3
Disease of the arteries, 450-456	61	39	22	21.7	17.7	16.8
Influenza, 480-483	3	1	2	1.1	1.4	1.1
Pneumonia, all forms 490-493	51	32	19	18.2	14.8	18.6
Bronchitis, 500-502	1		1	0.4	1.8	1.8
Appendicitis, 550-553	3	2	1	1.1	1.4	0.4
Intestinal obstruction and hernia, 560-561, 570	18	12	6	6.4	4.3	5.5
Gastro-enteritis and colitis, under 2, 571.0, 764	20	1	19	7.1	4.0	4.4
Cirrhosis of liver, 581	11	7	4	3.9	6.1	6.2
Diseases of pregnancy and childbirth, 640-689	5	1	4	6.7	8.0	7.6
Congenital malformations, 750-759	35	28	7	4.8	3.4	3.2
Immaturity at birth, 774-776	66	31	35	9.0	5.7	5.5
Accidents, total, 800-962	138	94	44	49.2	59.5	62.8
Motor vehicle accidents, 810-835, 960	69	53	16	24.6	30.7	25.6
All other defined causes	340	191	149	121.1	124.5	124.9
Ill-defined and unknown causes, 780-793, 795	96	36	60	34.2	34.6	37.6

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population



BOOK REVIEWS

Blood Diseases of Infancy and Childhood. By Carl H. Smith, M. A., M. E., Price \$17. The C. V. Mosby Company, St. Louis, Mo. 1960.

This book represents a classic in the pediatric field. It supplies a long awaited need and separates into one small volume an extremely comprehensive treatise of a very wide variety of diseases, either primarily related to the blood or with manifestations commonly regarded in the hematologic field. It is written by an author who is not only well versed in his field but who has the highest regard of his colleagues; yet, he is able to relate to the average reader an understanding of basic problems of the blood, their clinical consideration, including reasonable diagnostic and therapeutic methods.

While it is stated that the purpose is to present the essential of hematology in a concise form for the medical student and practitioner and to give a background of normal development of infancy and childhood, this book can serve as a very practical and necessary volume for frequent consultation for the practitioner who treats a fair volume of children's diseases. While it is, also, stated that this text is not intended to supplant larger volumes and is intended as a companion volume, it seems absolutely necessary that one have this volume readily available for the peculiar details of hematology as related to the infant and child. This book is commended particularly in that it carries out what the author intended to do that is, to make possible the detection of the common blood disorders by every medical practitioner utilizing history, physical examination, and simple techniques. In addition, this excellent text has a number of very valuable footnotes relating to manufacturers or suppliers of various necessary items utilized either in diagnosis or treatment. In addition, definite positive statements are made by an authority who does not leave difficult decisions with a less well-initiated reader.

The book is up to date, the references likewise; and in addition to the common well-recognized syndromes many other less well-recognized ones (by the average practitioner) are treated with a carefully chosen bibliography to support each should further reading be necessary.

The book is of reasonable size (weighs less than three and one-half pounds) and is divided into 27 chapters (each of which is supported in the areas

of basic consideration, diagnosis, and treatment) and a most complete bibliography for each chapter with a minimum of 23 and a maximum of 208 references for each of the various chapters. In addition, there is a valuable author index, as well as the usual subject index.

This is one of the most valuable texts recently made available in the realm of pediatric texts. While it is of specialized nature, its value will be distinct to the physician who treats infants and childhood diseases. It represents the result of tremendous industry and consideration by the author.

Harry C. Shirkey, M. D.

A Doctor in Many Lands. By Aldo Castellani, M. D. Cloth. Price \$4.95. Pp. 359. Doubleday and Co., Inc., 575 Madison Avenue, New York 22, N. Y. 1960.

This book is comprised of reminiscences told in anecdotal form by Dr. Castellani. The style is fluid and very easily read. The author does not attempt to make this an autobiography, but he does give enough of the necessary facts of his life for a person to have a fairly complete picture of the work which Dr. Castellani has done.

For those interested in personalities, and who isn't, this book will be extremely interesting as Dr. Castellani was the personal physician of many of the world's great figures. The reminiscences are liberally sprinkled with enough personal information on the world figures to make the anecdotes interesting and not just another group of well-known facts. For example, how many know that the great silent screen lover, Rudolph Valentino, wore a toupee?

A medical reader will most probably find the appendices the most interesting part of the book. Appendix I, entitled "Climate and its Influence," is drawn from Dr. Castellani's many years of working in all climates around the world. Appendix II, "Medical Aspects of the Ethiopian Campaign," is highly interesting and points out what can be done for service men if the medical profession is allowed enough authority within the military hierarchy to protect the health of the fighting men.

It is believed that all readers will find the volume highly interesting reading.

W. A. Dozier, Jr.

J. M. A. ALABAMA

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

January 1962

No. 7

The Pancreas And The General Practitioner

PHILIP THOREK, M. D.

Chicago, Illinois

The pancreas is one of the most interesting and diagnostically challenging organs in the body. In the past decade great strides have been made in revealing some of the mysteries of this hermit of the retroperitoneal cavity. Some of the more practical diagnostic features must be emphasized. This is particularly important for the man in general practice, because it is he who sees these "acute abdomens" first.

Annular Pancreas

This rare anomaly results from faulty embryonic development. An annular pancreas

completely encircles the second part of the duodenum at the level of the major duodenal papilla (Fig. 1). The symptomatology depends upon the presence and the degree of duodenal obstruction. This is characterized by colicky pain, nausea and vomiting as seen with upper gastro-intestinal obstruction. If the degree of obstruction is minimal, the symptoms may be delayed until adult life. Peptic ulceration of the first part of the duodenum may be a concomitant finding. Roentgenograms reveal a smooth narrowing of the second portion of the duodenum. Duodeno-jejunostomy or gastro-jejunostomy are curative.

Acute Pancreatitis

Etiology: Current thinking divides this condition into two types according to etiology. Hence we now speak of "gallbladder pancreatitis," or that form which is associated with diseases of the biliary tract and is supposedly more amenable to surgery; secondly, researchers and clinicians now consider the so-called alcoholic pancreatitis, which

Dr. Thorek is a graduate of the University of Illinois College of Medicine and a member of the International College of Surgeons, American College of Surgeons, and American College of Chest Physicians. He is Editor-in-Chief of The Journal of the International College of Surgeons and son of Dr. Max Thorek, founder of the International College of Surgeons. Dr. Philip Thorek is a clinical associate professor of surgery at the University of Illinois College of Medicine.

Read before the first Dixie Postgraduate Assembly, Birmingham, Alabama, July 13, 1961.

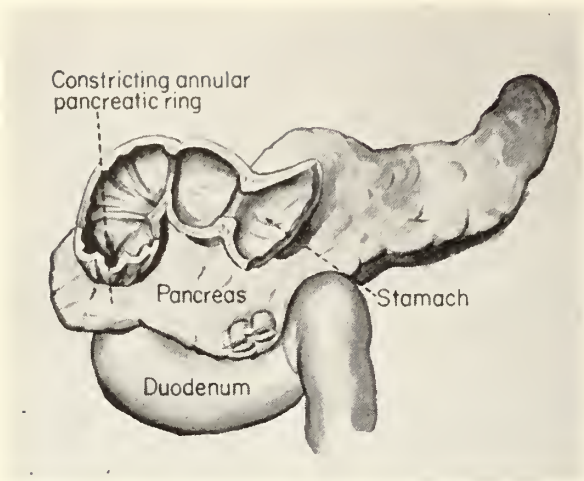


Fig. 1. An annular pancreas may encircle completely the second part of the duodenum at the level of the ampulla of Vater.

has a high retention fibrosis and does not respond to therapy. Fitz, in 1899, gave an accurate description of the condition; Opie, in 1901, described a case of pancreatitis produced by a stone lodged in the ampulla of Vater; he proposed the "common channel" theory whereby bile regurgitates into the pancreas via the pancreatic duct. It is presupposed that the bile salts activate pancreatic ferments which in turn digest the surrounding tissues. This results in edema, necrosis and hemorrhage.

Other factors have been associated with the etiology, namely, trauma producing intestinal hemorrhage, bacteria, and ingestion of food and alcohol. The author has devised a mnemonic aid showing that the causes of pancreatitis may be associated with the letter "B": Bacteria, Blood, Bile, Body Juices and Booze (Fig. 2).

Symptoms: Pancreatitis may affect patients of any age but predominantly those in the middle-age group. Symptoms vary, depending upon the extent of the disease; with pancreatic edema the symptoms are mild and vague, whereas in pancreatic necrosis they are violent. The onset is sudden and frequently follows the ingestion of a heavy meal and/or alcoholic beverages.

Pain originates in the epigastrium and is constant. It increases to an agonizing se-

verity and is rarely relieved by a single injection of morphine. It tends to radiate through to the back at a level which corresponds with the anterior location of the organ; at times it radiates to the left loin. These patients are relieved in a sitting position and are more distressed when lying on their backs (Fig. 3).

Nausea and vomiting appear shortly after the onset of pain. Rarely does vomiting produce relief.

Physical examination reveals an appearance which leaves no doubt as to the severity of illness. Whereas *shock* is absent in interstitial (edematous) pancreatitis, it occurs in almost every case of the necrotizing type. There is a striking contrast between the severity of the illness and the paucity of physical findings. The *pulse* is weak and at times increased. The *temperature* is normal in early cases. *Tenderness* is almost always present and is located supra-umbilically. As the disease progresses, *abdominal distention* appears, and the *peristaltic sounds become diminished*. Muscle spasm and rigidity are infrequent. *Jaundice* is present in about 25 per cent of the cases and is due to obstruction of the common duct by edema of the head of the pancreas; gallstones at the ampulla, or associated hepatitis may also produce jaundice. Cullen's sign (discoloration of the peri-umbilical area) or Gray-Turner's sign (discoloration in the flanks) are supposedly due to extravasation of blood into the retro-peritoneal space. These are extremely rare, although it is recorded that they are present in 10 per cent of the cases.

Laboratory Data: Leukocytosis is usually present to a moderate degree; however, this is nonspecific. Hemoconcentration as characterized by a high hematocrit and hemoglobin values occur early in the course of the disease.

The *serum amylase* content is almost always elevated early in the course of the disease. A simple laboratory test devised by Somogyi is based upon the amylolytic action of blood serum on starch: 180 Somogyi units are considered an upper limit of normal, and

any figure over 200 is considered abnormal. If the disease subsides or if the necrosis is so severe that no more ferments are produced, the serum amylase drops abruptly. For these reasons the determination must be made, preferably within the first 48 to 72 hours. Morphine will also give an elevated serum amylase test. It must be remembered, too, that other conditions such as peritonitis, pneumonia and perforated ulcers also may cause an elevated serum amylase test. Therefore, this test is suggestive of pancreatitis but is not pathognomonic.

The *serum lipase test* also has been utilized. This remains elevated longer than the amylase value; however, the test requires additional time and equipment.

Hyperglycemia, glycosuria and hypocalcemia also may be present.

The *roentgenologic findings* are not specific. A segmental ileus has not been de-

scribed; it appears as a "sentinel loop" of jejunum.

Differential Diagnosis: Numerous conditions producing acute abdominal pain could be included herein; however, only the more common ones will be mentioned:

1. Acute cholecystitis
2. Perforated peptic ulcer
3. Small bowel obstruction
4. Acute appendicitis
5. Mesenteric thrombosis
6. Gallstone ileus
7. Coronary occlusion

Complications: Acute pancreatitis should be treated conservatively; however, its complications require surgical therapy. The complications are cysts, abscess, pancreatic lithiasis and chronic relapsing pancreatitis.

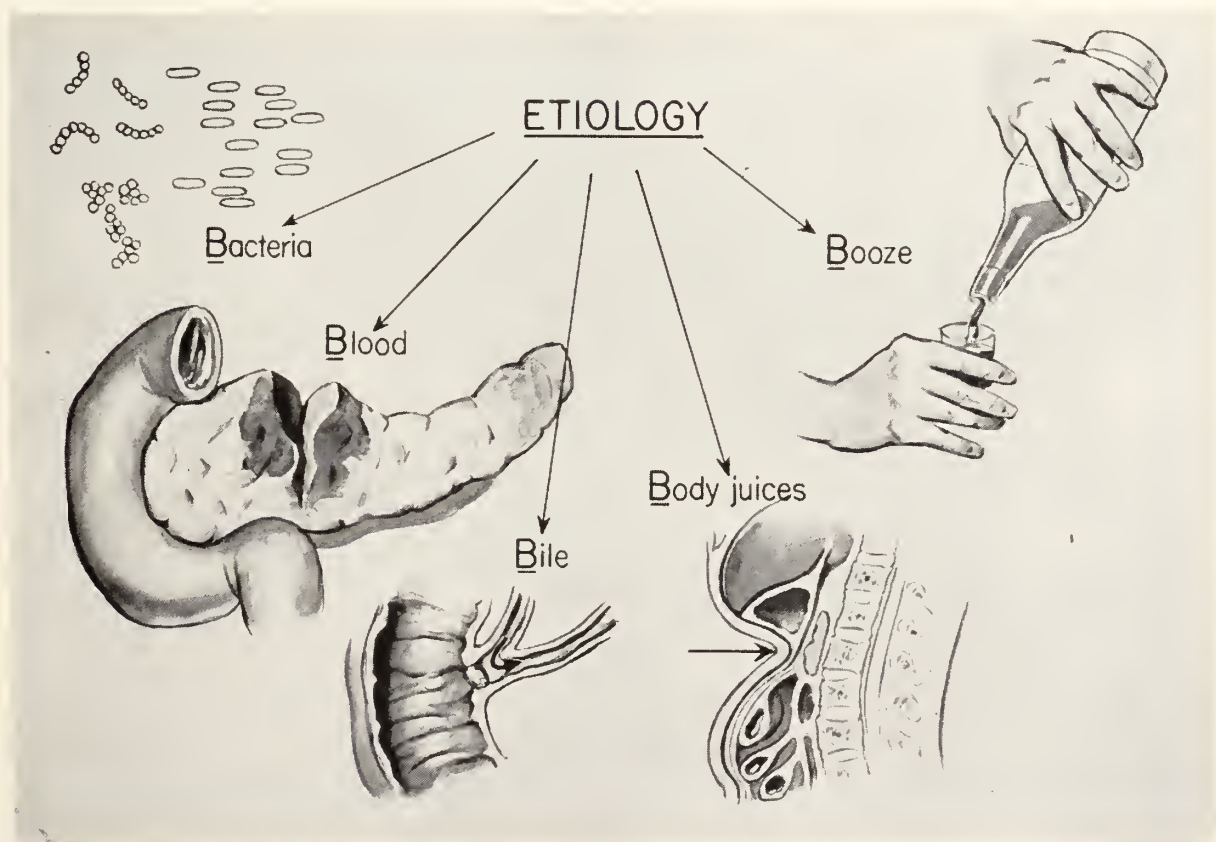


Fig. 2. The mnemonic "B" is being used to help us remember certain etiologic factors associated with acute pancreatitis.

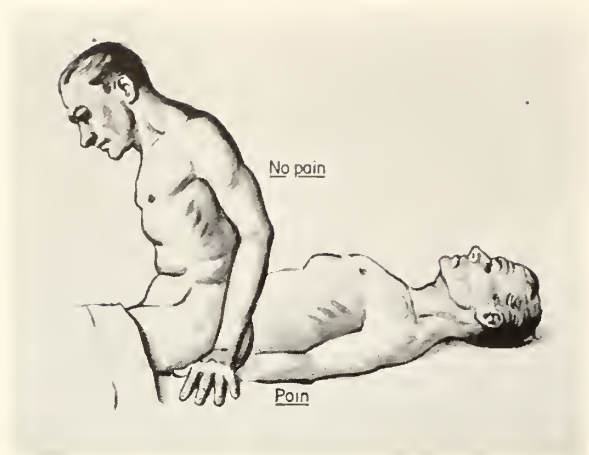


Fig. 3. Patients with pancreatic diseases are frequently relieved from their "backache" in a sitting position, and are more distressed when lying on their backs.

Prognosis: Patients with pancreatic edema usually recover, but the mortality of acute hemorrhagic pancreatitis still remains high. Delayed surgery or adequate conservative treatment has lowered the mortality in this condition from 50 to 15 per cent.

Chronic Relapsing Pancreatitis

This condition is a recurrent one, usually progressive, and associated with attacks of upper abdominal pain. It has assumed considerable significance as it is frequently confused with and at times impossible to differentiate from carcinoma of the pancreas, cholecystitis or so-called postcholecystectomy syndrome.

Etiology: The etiology is undetermined but appears to be associated with acute pancreatitis. The use of large sounds and dilators in the common duct produces trauma to and edema at the ampulla of Vater, which in turn results in stasis. If a common pancreatobiliary channel is present, this trauma can produce stasis and inflammation in the pancreas. The author is of the opinion that long "T" tubes which pass through the common duct and into the duodenum may also produce stasis by constant pressure on or obstruction of the pancreatic duct which, in turn, results in pancreatitis.

Symptoms: Abdominal pain, precipitated by the ingestion of food, is the usual symptom. Frequently it is referred to the back and is aggravated by assuming the supine position. Diarrhea is present in about half of the cases. The pain may be severe enough to require sedation. Jaundice may be associated with an acute attack or appear as a painless progressive icterus suggesting a malignant neoplasm. The jaundice is a result of edema of the head of the pancreas which compresses the pancreatic portion of the common duct. In about one third of the cases the symptoms of diabetes are noted first. The physical examination is essentially noncontributory. At times some tenderness is noted supra-umbilically.

Laboratory Data: Early in the course of the acute phase the serum amylase may be elevated. Following the administration of secretin, a diminished pancreatic excretion can be demonstrated by analysis of the duodenal contents. Glucose tolerance alterations are demonstrable in about one third of the cases; the presence of excess fat and undigested meat fibers in the stool are also suggestive.

The flat roentgenogram may reveal calcium deposits within the paranchyma of the gland which result either from calcium deposits or pancreatic calculi. No correlation exists between the roentgenographic demonstration of such calcific deposits and the severity of the clinical picture.

Chronic relapsing pancreatitis is one of the conditions which must be kept in mind constantly and included particularly in the differential diagnosis of peptic ulcer, gallbladder disease, hiatus hernia and coronary occlusion.

Pancreatic Cysts

Cysts of the pancreas can be divided conveniently into five types: (1) congenital, (2) retention, (3) neoplastic, (4) infections and (5) pseudocysts.

They have been divided surgically into true and pseudocysts in that pseudocysts are not lined with epithelium, whereas the true cystic cavities are.

The most important type of pancreatic cyst clinically is the *pseudocyst*. These are in reality encapsulated accumulations of fluid in and about the pancreas which occur as a result of trauma or inflammation (Fig. 4). A forceful blow or a severe crushing injury which involves the upper abdomen is frequently revealed in the history. The pseudocyst results from the inflammatory destruction of a part of the pancreatic parenchyma into which there is an escape of pancreatic

enzymes. The cystic fluid is clear or serosanguinous and contains bits of necrotic tissue.

Symptoms: Pain usually is associated with cysts that have attained considerable size. The pain is in the upper abdomen and radiates to the region of the costal arch or the back. Systemic symptoms include weight loss, fatigue, nausea, vomiting and anorexia. The cyst may be palpated more often toward the left subcostal area as a firm tense tumor in the epigastrium. Tenderness is more common in the pseudocyst than in retention or neoplastic cysts. Extrinsic pressure is exerted upon contiguous structures. Many of

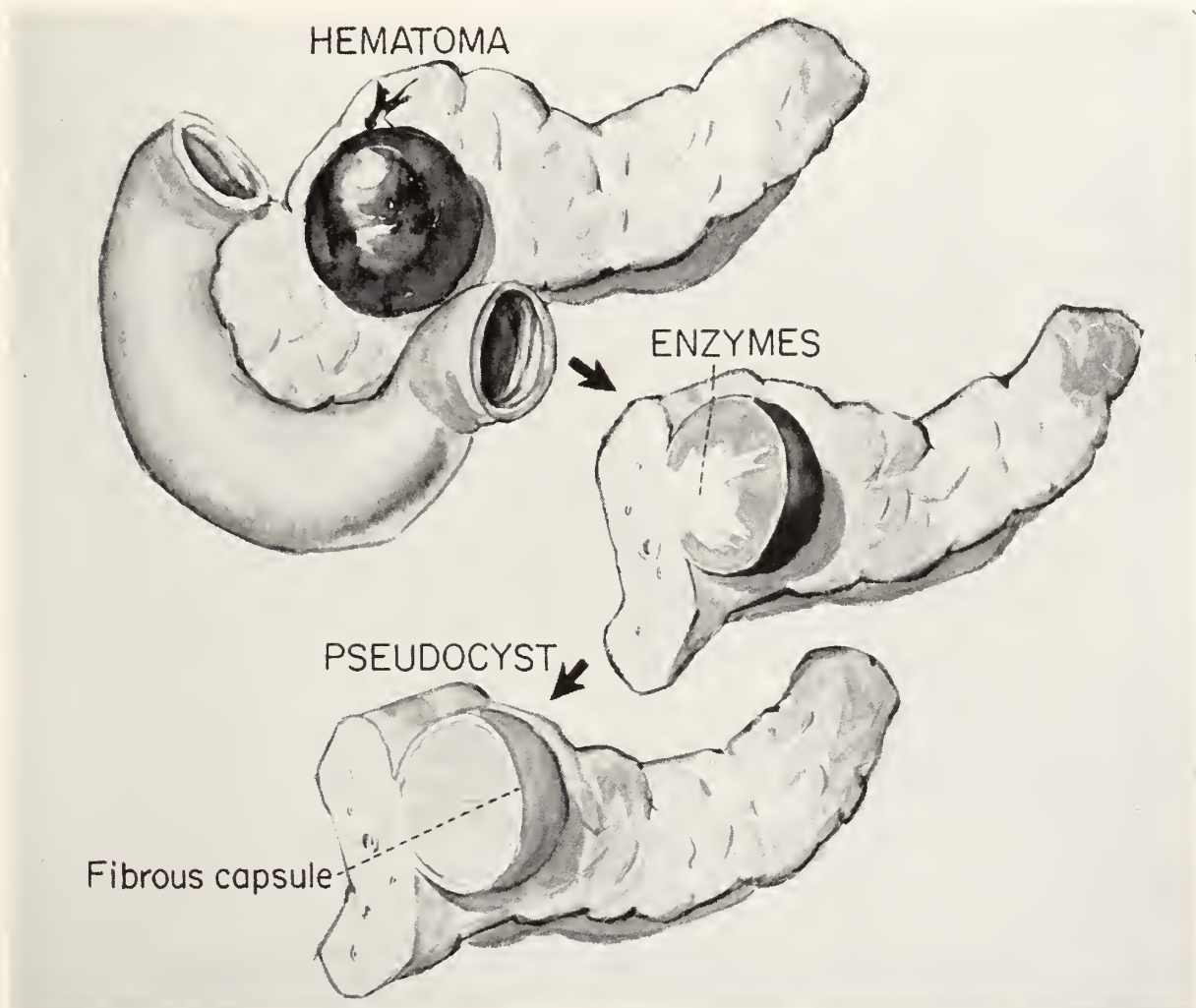


Fig. 4 Pseudocysts usually result from pancreatic clots which in turn are digested and liquified by pancreatic enzymes.

these cysts arise in the retroperitoneal space and project forward into the lesser peritoneal cavity; others are intraperitoneal, resulting from a rupture in the pancreatic capsule. They may point through the gastrohepatic or the gastrocolic omenta or may be insinuated between the layers of the transverse mesocolon.

Laboratory data: Specific laboratory tests are available. Elevated serum and urinary diastase, and fasting blood sugars occur more frequently in cysts of neoplastic origin. The *flat roentgenogram* of the abdomen usually reveals a spherical mass in the upper abdomen. Extrinsic pressure upon the stomach, the duodenum, the small bowel and the colon may be demonstrable with routine roentgenologic study. Similar displacements may be noted by barium enema or intravenous pyelograms.

Differential diagnosis: Pancreatic cysts must be differentiated from retroperitoneal tumors, mesenteric cysts, omental cysts, hepatic cysts and renal or perirenal masses. *Splenic cysts* are difficult to distinguish from those involving the tail of the pancreas. *Cysts of the omentum and the mesentery* are suspected by their extreme mobility. Those originating in the greater omentum may be moved in all directions. Cysts or tumors of the mesentery are more mobile in a transverse plane. Omental and mesenteric cysts tend to be spherical, but the palpable portion of a pancreatic cyst (the exception being the tail of the organ) is hemispherical. The mobility of pancreatic cysts depends upon other locations and the degree of surrounding inflammatory reaction. Cysts located in the pancreatic head or body are essentially immobile, although they may descend slightly on inspiration; those cysts that involve the tail are less fixed; this latter range of mobility might be confusing.

A *distended gallbladder* may be mistaken for a cyst of the pancreas; however, the gallbladder moves with respirations.

Congenital cysts are characterized by atresia of the pancreatic ducts, with the formation of minute cysts. A rare condition known as Lindau's disease is the association of renal, hepatic and pancreatic cysts with angiomas of the brain (retina); subnormal mentality completes the picture. A large so-called "congenital" cyst occasionally occurs without evidence of other developmental defects. Such a cyst suggests the existence of retention from a stone or inflammatory process. The rare echinococcal cysts in the pancreas are caused by the tapeworm of dogs (*Echinococcus granulosus*).

Carcinoma Of The Pancreas

Incidence: Carcinoma constitutes the most common tumor of the pancreas. It occurs most frequently in the fifth and sixth decades and is twice as common in diabetics. This follows the general observation that malignant disease is more common in the diabetic.

Head as a site: The head of the pancreas is the most common site, and tumors that involve this portion may invade the pancreatic portion of the common duct and/or the portal vein. The tumors that involve the body and the tail of the organ usually attain large sizes before clinical signs and symptoms develop.

The signs and symptoms associated with carcinoma of the head of the pancreas are frequently indistinguishable from neoplasms of the periampullary area (Vater) and from carcinoma of the common bile duct. *Pain* is more common than has been thought previously. Contrary to the concept that painless jaundice is the outstanding characteristic of this disease, one must re-emphasize the importance of pancreatic pain as an early, if not the earliest, complaint. The pain is usually dull, epigastric, radiates to the mid-back region, is aggravated by recumbency and eating, and progresses in severity. *Jaundice* is usually present but is continuous and rapidly progressive. The "P-A-D" triad of biliary obstruction is present, namely, Pruritis, Ac-

holic stools and Dark-colored urine. Weight loss is the most consistent symptom; it is usually rapid and severe. Fatigue is an early and insidious complaint. Anorexia, nausea, vomiting and at times diarrhea are present.

An enlarged liver is present in about 75 per cent of the cases. Despite this enlargement the organ is *not tender*, and its edge remains *relatively sharp* for many weeks. *Nodularity* does not necessarily signify liver metastases or inoperability but may be due to cystic dilations of the intrahepatic ducts.

An *enlarged gallbladder* is usually present. Courvoisier's law is most helpful in the differential diagnosis. The tumor itself is *rarely palpable*.

Laboratory data: The chief laboratory aides are tests for hyperilirubinemia, the presence of undigested meat fibers in the stool, hyperglycemia, increased alkaline phosphatase, and occult blood in the stool. *Roentgenologic examination* may be helpful if the following can be demonstrated: enlargement and/or displacement of the duodenum and the stomach, an increased duodenal sweep, indentation of the medial aspect of the duodenum, the so-called inverted "3" sign which is formed by the presence of the two adjacent indentures due to a large invasive growth, and actual duodenal obstruction with mucosal irregularity produced by tumor invasion or ischemic ulceration.

Body and Tail as Sites: Carcinoma of the body and the tail of the pancreas usually present a different clinical picture. The pain, which is in the upper abdominal region, is usually constant. It assumes a girdle pattern around the upper abdomen and the lower thorax. Jaundice is absent or late. These tumors can be demonstrated by the roentgenogram only when they have assumed sufficient size to produce extrinsic pressure upon the surrounding structures. The mass may

be palpable when the tumor involves the body or the tail.

Sarcoma: Sarcoma of the pancreas is a rare condition; however, this organ may be involved secondarily from retroperitoneal sarcoma.

Benign Tumors or Cysts of the Pancreas: These lesions may encroach upon the splenic vein and produce dilatation and rupture of the short gastric veins. This must not be overlooked in the diagnosis of so-called "idiopathic" gastro-intestinal hemorrhage.

Cystic Fibrosis Of The Pancreas (Mucoviscidosis)

This is a bizarre congenital condition in which the mucus-producing glands of various parts of the body manufacture an abnormal type of inspissated, viscid mucus. The incidence is one in every 500 to 700 infants. The disease may occur as meconium ileus, a respiratory disorder or a celiac condition. The celiac phase is associated with foul bulky stools. The most dependable test is the determination of the trypsin content of the duodenal juice collected through a duodenal tube. Trypsin in the stool may be detected by placing a diluted stool mixture on an undeveloped roentgen film. Normal trypsin activity is manifested by the digestion of the gelatin on the film. If absent, cystic fibrosis of the pancreas should be suspected. The mother may present the first clue if she notices a markedly salty taste when kissing the baby because of excessive perspiration which has a high salt content.

Only the highlights have been touched in the time allotted. However, I hope that this has been interesting enough to stimulate the student, be he undergraduate or postgraduate, to continue with the study of this fascinating organ.

Case Report—

A Review Of Carcinoma Of The Pancreas

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Carcinoma of the pancreas represents a very difficult problem, both from the diagnostic and therapeutic standpoints. Comparatively, the progress made in this field is lamentable. The prognosis, even after exhaustive diagnostic procedure for early detection and drastic therapeutic measures, remains quite dismal. The chief hope for survival lies in pancreatoduodenectomy,^{1, 2, 3, 4, 13} but since the introduction of this procedure reported cases of patients surviving five years or longer have been rare.^{5, 14}

The following case is reported as an example of the advanced state of pancreatic malignancy with comparatively brief symptom duration when diagnosed and the relative value of the leucine aminopeptidase enzyme study in its differentiation.

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Case Report

A 54 year old white male tool room clerk was admitted to the Seale Harris Clinic on August 1, 1960 for diagnostic evaluation. He was transferred to this Clinic from another medical institution where diagnostic studies had recently been completed in which rectal stenosis was reported as the only significant finding. For three months sharp shooting pains had been present in the mid-abdomen just below and to the right of the umbilicus. These pains radiated in all directions from this area but chiefly to the lower right abdomen. Associated with the abdominal pain were tenderness and soreness in the region of the xyphoid process and lower ribs, anteriorly, radiating into the back. The supine position aggravated the pain and turning on the right side alleviated the discomfort. Sitting or bending forward did not seem to influence the pain. Associated with the abdominal pain was indigestion consisting of belching and sour stomach. There was no significant difference with or without food. Anorexia had been increasing over the past

week. Constipation, increasing in severity, had been noted for the past two months, although no blood or mucus was noted in the stool. Laxatives which previously helped had seemed to lose their effect. Within the past one month 12 pounds of weight had been lost. Progressive loss of energy and strength was disturbing to the patient. A bad taste annoyed him. At no time had he experienced nausea or vomiting or jaundice. He further stated that he had been well throughout his life until the present illness.

Physical examination revealed a chronically ill patient with pulse 68 and blood pressure 140/70. The sclera did not exhibit an icteric tint but possessed a slightly muddy appearance. There were high mid-epigastric tenderness and a tight rectal sphincter. The liver, spleen and pancreas were not palpable and no abnormal masses were detected in the abdomen. The patient did not appear anemic and there was no evidence of superficial venous thrombosis.

Laboratory investigation: Blood hematocrit 49 per cent; hemoglobin 90 per cent; RBC 4,650,000; WBC 5,250 with 73 segmented neutrophils, 24 lymphocytes and 3 eosinophils. Bilirubin, direct 0.05, total 0.25. Alkaline phosphatase 5.1 Bodansky units/100 ml.; inorganic phosphorus 4 mgm/100 ml.; serum proteins 8.10 gm/100 ml., albumin 4.04 and globulin 4.06; serum cholesterol 150 mgm/100 ml.; cephalin cholesterol flocculation +3/+3; NPN 32.5 mgm/100 ml.; calcium 5 mEq/l; leucine aminopeptidase (LAP) 480 GR units. Nine days later, the leucine aminopeptidase (LAP) had increased to 635 units; bilirubin, direct 3.4, total 5.1; icterus index 33; alkaline phosphatase 34. The electrophoretic pattern of the serum proteins showed no significant abnormalities. A four hour glucose tolerance test showed the following figures: Fasting 111 mgm/100 ml.; one hour 234, 0 urine; two hours 234, trace urine; three hours 200, 0 urine; four hours 180, 0 urine. Phenolsulfonphthalein dye excretion was within normal limits. Sedimentation rate was 24 mm/min., corrected, in one hour. Blood serology was negative. The urine showed a

+1 albumin but was negative for Bence-Jones protein. Stool examination was negative for occult blood, mucus and parasites.

A digestive tract survey revealed a large faint gallbladder shadow, using both oral and intravenous dye methods. Upper G-I series revealed no intrinsic lesions of the esophagus, stomach or duodenum. The retrogastric space was thought to be slightly increased but this was not an outstanding finding. No significant abnormalities were detected in the duodenal loop. Barium enema was within normal limits. X-rays of the chest, skull and lumbar spine showed no detectable abnormalities. The ^{131}I triolein test showed equivocal results and was not consistent with the findings expected in pancreatic carcinoma. The gastric analysis was within normal range. In the sigmoidoscopic examination, rectal stenosis of moderate degree was present, but no significant lesions were noted to 15 centimeters. Duodenal intubation for the secretin test was considered unsatisfactory and the patient refused further cooperation. The electrocardiogram was normal.

The pre-operative diagnosis was carcinoma of the pancreas, which was confirmed by abdominal exploration, at which time a cholecystojejunostomy and jejunojejunostomy were performed. An intra-abdominal metastatic lymph node was removed at the time of operation for pathological evaluation. Microscopic examination of the lymph node revealed metastatic mucus producing adenocarcinoma.

Discussion

A careful history reveals certain points suggestive of pancreatic carcinoma. Abdominal pain is usually the most prominent initial symptom. Gullick¹⁵ studied 100 patients with pancreatic carcinoma and is of the opinion that persistent upper abdominal pain with inexplicable weight loss justifies a presumptive diagnosis of pancreatic cancer if no cause for these signs is evident following a thorough diagnostic evaluation of

the gastro-intestinal tract. The pain has been described as steady, boring or colicky, often severe, and may appear in paroxysms. The recumbent position or jarring movements, such as walking or riding, tend to aggravate the discomfort. Relief is sometimes obtained when the patient bends forward. A relation of the location of the pain to the location of the neoplasm helps in some instances but is not an infallible diagnostic rule. Pain radiating from the mid-abdomen to the right upper quadrant of the abdomen may be associated with cancer of the pancreatic head and that which extends to the left may be related to neoplasms of the body and tail. The lower quadrants of the abdomen may be involved with pain.

Formerly, it was thought that painless jaundice was the most significant sign of pancreatic cancer but this concept has been revised more recently.¹⁶⁻²⁰ Jaundice, as the initial symptom, occurs often enough, however, to justify some emphasis. In most current series the frequency of jaundice is estimated between 15 and 20 per cent but according to Nightingale²¹ this occurred in 37 per cent and for 33 per cent the head of the pancreas was the primary site. In addition to abdominal pain, jaundice and weight loss, other symptoms may suggest a diagnosis of pancreatic cancer, i.e., progressive fatigue and generalized weakness, anorexia, nausea and vomiting. Constipation may be one of the initial symptoms, occurring in about ten per cent of the patients. Diarrhea occurs in about an equal number.

It is not unusual for a patient with pancreatic carcinoma to be erroneously diagnosed as a psychological problem, in particular, a depressive type. Pancreatic carcinoma is suggested in a depressed individual with persistent abdominal pain and weight loss.

Coexistent diabetes mellitus has been reported in from seven to 13 per cent of patients with cancer of the pancreas. Castleman²² is of the opinion that although mild diabetes may develop in a person who has carcinoma of the pancreas, there is no convincing evidence that changes in the pancreas

of diabetic patients make it more vulnerable to cancer.

The reported frequency with which venous thrombosis occurs in these patients is variable. In the Nightingale²¹ series, three patients had superficial venous thrombosis. No phlebitis occurred as a post-operative complication in the 67 patients who had surgery. Approximately 36 per cent of patients who were not treated surgically were found to have this condition by Gullick.¹⁵ Kibler and Bernatz,²³ in reporting 175 cases of carcinoma of the body and tail of the pancreas, found only five of 158 patients examined had pre-operative venous thrombosis and of these four had concomitant metastasis to the liver. Phlebitis was an initial symptom in only one case.

Unfortunately, in the physical examination, the abnormal findings, when first exhibited, indicate advanced disease. The most common findings are hepatomegaly, gallbladder distension, splenomegaly and ascites. It should be noted that enlargement of the liver may also be caused by dilatation of the bile duct and biliary stasis from tumor obstruction rather than from metastatic disease. When the pancreas becomes sufficiently enlarged to be palpated the condition is far advanced.

The laboratory can be of definite assistance in the establishment of the diagnosis of pancreatic carcinoma. The tremendous reserve of the pancreas has limited detection of functional abnormality. Also, it has the ability to recover very rapidly in the clinical course of inflammation. Recently Dreiling and Janowitz,²⁴ in studying 1,500 cases, have shown that the secretin test is a reliable method of investigating the function of the external pancreatic gland and of diagnosing inflammatory and neoplastic disease of the pancreas. They describe two defects in secretions in patients with pancreatic disease: a qualitative one which is characteristic of chronic pancreatic inflammation and a quantitative one which is indicative of pancreatic duct obstruction as seen in tumors. In advanced pancreatic disease the defect may be

both qualitative and quantitative, making it impossible, from the secretin test alone, to differentiate between cancer and chronic pancreatitis. More frequently, Dreiling et al²⁵ have combined the secretin test with a cytology test in studying a series of 212 patients. Satisfactory cytologic material was obtained in about 95 per cent of their series with a false positive cytologic report in only 5.6 per cent. They found the combined cytologic-secretin diagnostic procedure had a significantly higher index of accuracy than either test alone. It is their opinion that this combined study appears to narrow the major gaps in diagnosis by the secretin test alone—namely, (a) the inability to diagnose lesions of the body and especially the tail; (b) the inability to define the nature of lesions in patients with jaundice; and (c) the inability to exclude coexistent cancer in patients with advanced chronic inflammatory disease of the pancreas.

Raskin et al²⁶ described a method for rapid intubation in which sufficient material for diagnosis can be collected by proper positioning of the patient. In studying 356 patients these investigators procured identifiable malignant cells from 33 of 43 patients with cancer of the pancreas. By evaluating serum trypsin, Nardi et al²⁷ have found that this substance is elevated in the blood by obstruction of the bile duct by stone, pancreatitis and other conditions. A much higher level of trypsin is, however, obtained when cancer of the pancreas is present.

One of the major contributions in recent years regarding the study of pancreatic carcinoma has been the development of the leucine aminopeptidase (LAP) test.²⁸ This proteolytic enzyme is known to have high activity in liver, pancreas, kidney and small intestine. Patients with carcinoma of the head of the pancreas or extrahepatic biliary tract have extremely high serum leucine aminopeptidase levels. In common duct obstruction, complete or incomplete, intermittent or constant, the serum LAP values are often elevated before the bilirubin or the alkaline phosphatase. In a study of 17 of 19

patients with cancer of the body or tail of the pancreas elevated LAP activity was demonstrated. Serum LAP levels are generally higher in patients with obstructive jaundice caused by tumor than in those with calculous obstructive jaundice.

In the case presented the singular most revealing diagnostic procedure would appear to be the leucine aminopeptidase test, the high level of which pointed to a diagnosis of probable carcinoma of the pancreas or extrahepatic biliary tract. This test was positive before the serum bilirubin was elevated or significant elevations of the alkaline phosphatase were recorded.

Schultz²⁹ has recently reported on the radiological diagnosis of enlargement in the region of the pancreas with special reference to the increase in the retrogastric space. He studied 50 patients and found that increase in the retrogastric space has been the most consistent radiological abnormality found in cancer of the pancreas, pancreatitis, enlarged lymph nodes and other retroperitoneal masses in the region of the pancreas. He further describes other radiological changes in 18 patients with carcinoma of the pancreas as: flattened medial duodenal folds, deformity or obstruction of the duodenum, "pad" effect on antrum or duodenum, elevation of gastric antrum, mucosal destruction, inverted "3" deformity, dilated common duct and widening of the duodenal loop. He emphasizes that lateral views of the upper gastrointestinal tract should be made routinely. An error was made in two hypersthenic patients but none in determining the retrogastric space in thin or average patients.

Moseley³⁰ has studied 25 patients by pneumoretroperitoneal-pancreatography and demonstrated a pancreatic mass in 17 cases confirmed by surgery or autopsy.

The definitive means of diagnosis is exploratory laparotomy although even by this method, identification is sometimes very difficult. Differentiation between chronic pancreatitis and neoplastic disease presents the greatest problem. At times the pancreatic neoplasm cannot be palpated and histologic

diagnosis of a frozen section may be misleading due to inflammation surrounding the tumor. Should pancreatic cancer be suspected, exploration should be used unhesitatingly.

Carcinoma of the pancreas invariably offers a poor prognosis. Cystadenocarcinoma and islet cell carcinoma of the pancreas offer a somewhat better prognosis. Kibler and Bernatz²³ emphasize the dismal therapeutic results with carcinoma of the body and tail of the pancreas and that no laboratory tests are of consistent value in the diagnosis of neoplasms in this area. Patients with untreated carcinoma of the head of the pancreas ordinarily survive less than 18 months^{6, 31, 32, 33} with a usual survival time of three weeks to six months.^{6, 8, 10} Patients with palliative biliary-intestinal anastomosis survive under 29 months³¹ and usually survive from four to 14 months.^{18, 34, 32, 33} Only pancreatoduodenectomy produces more prolonged survival time, averaging from ten to 26 months.^{18, 34, 31, 35} Ginsberg¹³ has recently reported the fourteenth case in the literature that has survived more than six years after pancreatoduodenectomy for carcinoma of the head of the pancreas. Ross² in reporting on the surgical treatment for cancer of the head and body of the pancreas recommends a total pancreatectomy and is encouraged by having two seven year survivals without evidence of recurrence following this operative procedure. Gullick¹⁵ is of the opinion that the poor prognosis associated with carcinoma of the pancreas does not detract from the value of the surgical therapy but, rather, shows that this is the only way at present to alter the course of the disease. Pipes and Pareira³⁶ in reviewing 34 patients with non-resectable primary pancreatic carcinoma, recommend routine gastrojejunostomy in addition to palliative biliary diversion when an exploratory laparotomy reveals biliary obstruction.

Radiation therapy has been instituted by Miller and Fuller³⁷ on 91 proved cases of carcinoma of the pancreas. The average survival time was only 6.6 months after the initiation of radiation therapy and 12.8

months after the initial symptoms. Radiation therapy is credited with excellent results as far as survival time and general condition of the patient in ten per cent of the cases. Billingsley et al³⁸ studied the survival times in 52 cases of carcinoma of the pancreas in which surgical excision was not performed; radiation therapy offered no appreciable palliative benefit in 13 of these cases. Harper and Lathrop³⁹ achieved a definite degree of palliation of pain for carcinoma of the pancreas by local therapy with gamma rays from ¹³¹I introduced postoperatively by a polyethylene tube threaded around and through the tumor.

Summary

The difficult and discouraging problem of pancreatic carcinoma has been reviewed. Although some advancement has been made in our diagnostic procedures, notably in the combined cytologic-secretin diagnostic method and in enzyme studies, we remain far from the answer for an early diagnostic solution to this dilemma. The prognosis is invariably poor. The chief hope, at present, for survival is the earliest possible surgical intervention and, when feasible, a total pancreatectomy.

A case of carcinoma of the pancreas is presented in which the singular most revealing laboratory diagnostic finding proved to be elevation of the serum leucine aminopeptidase.

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Diagnosis And Management

Of Thrombophlebitis And Its Sequelae

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Thrombophlebitis of leg veins occurs in several different forms, each with a different set of complications, a different prognosis, and a different method of treatment. These types are, (1) Superficial phlebitis involving inflammation and thrombosis of the superficial or saphenous system, (2) Deep thrombophlebitis involving the femoral and popliteal veins, and (3) Ilio-femoral phlebitis or milk leg.

Superficial Phlebitis

Diagnosis of this entity is relatively simple since the inflamed superficial veins are tender, hot, and the surrounding skin is reddened. Thrombosis in the vein produces a tender

cylindrical cord in the longitudinal direction of the saphenous chain. Quite frequently this syndrome is initiated by interdigital fungus infection, and it may occur in the presence or absence of true saphenous varicosities. Aching discomfort may be moderately severe and walking or standing may be painful for seven to 14 days.

Of great importance is the fact that superficial phlebitis has seldom, if ever, been known to produce pulmonary emboli. The venous thrombosis associated with this type of phlebitis obliterates the lumen of the varicosities, and there is seldom recanalization of the vein; therefore, the inflammatory process is an effective way of removing varicosities, and there is no indication for surgery after the acute episode. Chronic ankle edema does not follow superficial phlebitis.

Since embolization is not a problem, hospital treatment is seldom necessary and anticoagulants are almost never advised. Patients can often be treated on an ambulatory basis if tenderness and inflammation is mild. Ap-

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Read before the First Dixie Postgraduate Assembly, Birmingham, Alabama, July 11, 1961.

plication of dry heat in the form of a heat lamp and the use of an anti-inflammatory agent to reduce the surrounding cellulitis are the standbys of treatment. In our hands Butazolidin® has been most effective given in doses of 200 mg. four times daily after meals and at bedtime for a period of about five days. Striking relief of pain and tenderness in 24 hours is the usual finding. Antibiotics are seldom indicated since there is usually no systemic infection or fever, but vigorous treatment of fungus infection, if this is present, is certainly important in preventing recurrence.

Deep Calf Vein Phlebitis

This, of course, is the most frequent type of thrombophlebitis and is encountered in the postpartum or postoperative period. The cause of this type of phlebitis is not entirely clear, but it may be produced by a combination of stagnation of blood in the deep veins and hypercoagulability of the blood during the postoperative or post-delivery period, though by presently available laboratory technics it is not possible to demonstrate hypercoagulability. The diagnosis is sometimes quite difficult. A typical case of thrombophlebitis manifests itself with calf tenderness to pressure and a positive Homans' sign or pain in the calf on dorsiflexion of the foot. Slight temperature and pulse elevation often accompany this condition. Other causes of leg pain after operation such as Achilles tendinitis, arthritis of the knee and ankle joints, muscle cramps and myositis cause confusion.

Two distinct types of deep phlebitis have been described; one, a bland type of phlebitis termed phlebothrombosis, and the more inflammatory kind with greater pain and inflammation and redness called thrombophlebitis. The bland form with minimal or no symptoms is highly dangerous from the standpoint of pulmonary embolization since there is little inflammatory reaction to cause fixation of the clot in the deep veins. The typical inflammatory type is slightly less likely to be complicated by embolization. In

both types an additional late complication of the post phlebotic syndrome from destruction of the important vein valves is troublesome in a large percentage of patients.

Once the diagnosis has been established as definitely as possible, treatment should consist of (1) bed rest with high leg elevation to permit adequate drainage of the veins and to prevent further stagnation of blood, and (2) anticoagulation. There are two basic types of anticoagulation, heparin drugs and coumarin drugs. Heparin drugs have many advantages for short term anticoagulation in this type of condition and are most frequently used in surgical and postpartum cases. Blood purposely trapped in veins of experimental animals for several hours readily demonstrates the greater effectiveness of heparin over coumarin anticoagulation. Another major advantage of heparin is the ease of reversal with protamine of the anticoagulation effect in the face of possible bleeding in postoperative or postpartum patients. The expense of heparinization is, however, considerable, in the neighborhood of thirty dollars daily including the administration of the drug and the necessary clotting time determinations.

There are several methods of administering heparin for anticoagulation, each having its enthusiastic advocates. As so often is the case, when several methods are advocated, any effective method is probably satisfactory. Continuous intravenous drip of dilute heparin is sometimes used to allow a steady drug level. Other methods are the repository method to obtain a prolonged effect from one injection and the intermittent intramuscular or intravenous administration. In our hands intramuscular heparin injection every four hours has been most satisfactory allowing a satisfactory blood level of heparin without too great a rise and fall of clotting time between doses. One can effectively follow most patients with one clotting time determination daily if this is taken exactly one hour before the next dose of heparin is given, which means it will be measured three hours after

a previous dose. It is important always to specify the exact time for the technician to take the clotting time, and clotting time should be kept between 20-30 minutes. Heparin should be continued for at least ten days and until the patient is ambulatory, when it should be slowly discontinued.

Coumarin drugs as anticoagulants are safer for prolonged out-patient administration since a safe prophylactic level can usually be maintained with one prothrombin time determination each week. Long term coumarin anticoagulation is sometimes helpful in cases of recurrent deep phlebitis occurring weeks or months apart without apparent reason.

Treatment with anticoagulation is seldom 100 per cent effective since a few patients in any large series develop pulmonary embolization even in the face of adequate anticoagulation. In this case inferior vena caval ligation should be done to prevent recurrent pulmonary emboli which may cause death or severe right heart embarrassment and chronic failure. This is considered the prime indication for inferior vena caval ligation, namely, the development of pulmonary embolization in the face of adequate anticoagulation. A single pulmonary embolus without prior anticoagulation is not considered an indication for vein ligation. Ligation of the superficial femoral or common femoral veins is seldom practiced any more since subsequent episodes of embolization have occurred frequently enough to be discouraging. In these cases it seems likely that clots were present in the pelvic veins. Vena caval ligation is efficient in preventing recurrent embolization but is frequently followed by persistent and chronic swelling of the ankles; therefore, this operation is not carried out unless indicated to save the patient from a second serious pulmonary embolus.

The unfortunate fact, however, is that approximately 50 per cent of fatal pulmonary emboli occur in patients with no preexisting leg complaints. To lower the mortality rate from pulmonary embolization we must, therefore, develop a prophylaxis for phlebitis. Many measures have been tried such as early

ambulation, elevation of the foot of the bed postoperatively, wrapping the legs to promote more rapid flow through the deep venous system and even prophylactic anticoagulation. Each of these methods is either not completely effective or is too expensive to be practical. This is the greatest need in this field, namely, better understanding of the cause of phlebitis and its prevention.

Ilio-femoral Phlebitis

In deep calf phlebitis there may be mild ankle or calf swelling. If the thrombotic process occurs in the iliac and femoral veins, however, there will be swelling of the calf, thigh, and ankle of moderate degree. Again, this type of phlebitis may take various degrees of severity. The pale, swollen leg that develops after childbirth has for many years been called "milk leg." This has been termed by the French phlegmasia alba dolens. It may occasionally lead to pulmonary embolism and very frequently leads to a chronically edematous ankle after recanalization of the veins and destruction of the deep valves. A more serious form of ilio-femoral thrombosis, phlegmasia cerulea dolens, has been described and is occasionally seen. This is a swollen blue leg following ilio-femoral phlebitis and it sometimes develops suddenly in perfectly healthy individuals. It may develop with astonishing speed or it may slowly progress from the milder manifestations of calf vein phlebitis. In addition to swelling of the calf and thigh, there may be severe pain, coldness, blueness, of the entire extremity, loss of pulses in the involved leg, and occasionally circulatory shock from the trapping of a large volume of blood in this extremity and even peripheral gangrene from ischemia. These complications may occur in as many as half the cases if left untreated. This condition is sometimes called pseudo-embolic phlebitis because of the sudden onset of coldness and its superficial resemblance to arterial embolization. The differentiation should not be difficult since with arterial occlusion there is no edema and with this con-

dition there is massive, tense edema of the entire leg.

Treatment for ilio-femoral phlebitis may consist of anticoagulation and bedrest with high leg elevation. This may be all that is necessary for the milder types of milk leg, but if arterial insufficiency seems impending, more vigorous measures are certainly indicated. Sympathetic nerve block either by the epidural or paravertebral route is helpful. We have found that this alone can cause a drop in the very high venous pressure in the ankle veins which must indicate release of spasm of the non-occluded collateral veins rather than release of arterial spasm.¹ This has saved the extremities and possibly the life of several patients in our series. A more effective method has been recently advocated—namely, emergency thrombectomy under local anesthesia.² A small incision in the femoral vein in the groin under local anesthesia can easily be made in the sickest patients and the clot can be extracted from above and below without difficulty. There seems to be little danger of embolization of the proximal clot especially if pressure is maintained on the abdominal wall to increase intra-abdominal pressure. In fact, the clot expresses itself out of the venous incision with moderate force. The peripheral clot can be expressed by milking the elevated leg from the ankle to the thigh or by wrapping it with an Ace® bandage. Clots as much as 18 inches in length have been extracted in this way. This has two advantages. It immediately allows the restoration of arterial inflow into the leg and lowers the tremendously high venous pressure. This also protects the deep vein valves from destruction and prevents the otherwise inevitable postphlebotic syndrome of rather severe degree in these patients. We feel that this is now the treatment of choice of all cases of ilio-femoral thrombophlebitis in an effort to restore patency to the leg veins and to prevent the crippling sequelae. Following thrombectomy the venous incision is carefully reconstructed with fine arterial silk, and a cut-down is placed in the ankle vein of the involved leg for a continuous heparin drip. This is continued for 48 hours. Then heparin

is given intramuscularly every four hours. The results of this technic have been excellent with immediate improvement in most cases and almost no postphlebotic sequelae. To be effective, thrombectomy must be done within 24 to 48 hours after onset and before the thrombus becomes adherent to the vein wall.

Postphlebotic Syndrome

This is a very common complication of deep phlebitis. Thrombosed veins recanalize leaving a thickened channel without valves. Upon ambulation the "peripheral heart" of leg muscles is much less effective because these muscles compress valveless veins, and blood is forced both up and down instead of only centrally toward the heart. Therefore, there is no way that patients can reduce the pressure in the veins around the ankle by leg exercise and walking. The following sequence of events occurs:

1. Thrombophlebitis
2. Venous thrombosis
3. Recanalization
4. Destroyed valves (venous hypertension)
5. Fluid transudation
6. Ankle edema
7. Deposition of fibrinogen, fibroblastic scar, choking of skin and subcutaneous capillaries and lymphatics.
8. Trauma and secondary infection
9. Chronic ulceration

Every individual who has developed edema with this syndrome is susceptible to ulceration if the edema is not controlled.

It is interesting to note that the "venous hypertension" mentioned above is not an elevation of venous pressure above normal on standing as the term implies. Venous pressure is essentially the same in the normal ankle and in the postphlebotic ankle when the patient is standing. The pressure in both cases rises exactly to the level of the heart. It is only when the patient begins to walk in place and use his leg muscles that the dy-

dynamic difference in venous pressure is demonstrated. In the normal leg venous pressure rapidly drops to ankle, knee, or calf level by the very effective action of the peripheral heart mechanism. In the abnormal leg the absence of veins will seriously diminish the effectiveness of the peripheral heart and, therefore, the pressure can only fall to the level of the xiphoid, or umbilicus with walking. Thus, the so-called venous hypertension is really an inability to lower the venous pressure by exercise. Prolonged standing or walking results in edema since the patient cannot reduce the pressure by an ineffective pumping mechanism.

The main-stay of prevention and treatment of the postphlebotic stasis syndrome and its complications is the prevention of edema. This can be brought about in two ways; first, antigravity measures and second, external support to prevent fluid transudation. The patient must co-operate, and his education is of the utmost importance in prevention and treatment. In fact, it far out-weighs any benefit that might develop from surgery. Antigravity measures such as propping the feet on stools when sitting, elevation of the foot of the bed at night, ten to 20 minute periods of high leg elevation while lying supine during the day, avoidance of prolonged periods of standing; all are most helpful, and should be described in detail to the patient. Methods of external support include, (1) elastic stockings, (2) Ace® bandages and (3) boots of various kinds. An elastic stocking is often effective enough in patients with mild edema. Ace® bandages properly applied can produce even greater pressure, and can overcome more severe edema. But they have the disadvantage of a tendency to slip and to develop unequal pressure causing transverse ridges. Neither of these types of external support will be sufficient, in most cases, to heal a chronic ulcer. Bed-rest with leg elevation will heal any ulceration but this may take six to eight weeks or longer in the case of large ulcers and is impractical in many middle aged individuals who are bread winners or mothers who care for children. It is here that boots

are most effective. A most practical boot is one of Elastoplast® since the necessary material can be kept in any physician's office and this type can be applied with a minimum of preliminary preparation. To apply an Elastoplast® boot one should clean the skin around the ulcer, cover the open areas with fine mesh gauze without medication. Almost all types of ointments, especially those with medication, tend to cause an occasional severe dermatitis. Even Vaseline® gauze is occasionally guilty of this. The major purpose of the material next to the skin is to prevent the dressing from sticking. Fine mesh gauze does this perfectly well without danger of dermatitis. Any secondary infection will clear as the edema subsides, and no antibiotic ointment is necessary. Occasionally there will be such a painful degree of cellulitis around the ulcer so that a boot cannot be applied until a few days in bed with leg elevation and saline compresses have allowed the acute inflammation to resolve. Over the fine mesh gauze several layers of absorbent gauze sponges are placed, building up quite an elevation of dressing—at least ½ inch thick. The leg is then wrapped with gauze bandage from the base of the toes to the tibial tubercle. This layer serves to protect the skin from the irritating effect of adhesive on the Elastoplast® and to supply uniform padding. Next the Elastoplast® itself is wrapped in a circular fashion including the heel from the base of the toes to the knee. This is wrapped as tightly as possible, and most patients can tolerate the bandage quite tightly applied. If there is any question about the dressing being too tight, the patient should remain for one hour in the physician's office, by which time, pain will occur if the bandage is too tightly applied. A tight boot does a great deal to relieve edema and pain. Most individuals can return to a standing occupation with such a boot, and the ulcer will slowly heal. This is by far the most effective method for ambulatory healing of ulcers. The boot should be changed as often as necessary depending on the amount of secretion. At first the boot will need to be reapplied every three or four days, but, as the ulcer becomes

dry, it can be left in place for as long as two weeks. Boot dressings may take six or seven months for ulcer healing whereas bed-rest may allow healing in two months; but the advantage of continued ambulation is of great practical benefit.

Surgery

There are only two indications for surgery in the postphlebotic syndrome. 1. If there are accompanying varicosities of significant degree so that stasis in these superficial veins is contributing to the edema, then these veins should be widely stripped. This is usually not the case, since most patients have very mild or no varicosities with this syndrome. 2. The second indication for an operation on occasional patients is the excision of the base of an ulcer which is heavily scarred and which requires the application of a skin graft. The excision of the fibrotic scar is the chief benefit from this operation, not the skin graft. Many ulcers are very slow to heal and they break down repeatedly because of the fibrotic scar tissue base which constricts capillaries and lymphatics. If this scar tissue is excised down to healthy tissue and a skin graft is applied, the ulcer will be much less likely to recur. Many ulcers do not need this type of surgery but can remain well healed after conservative therapy if proper measures are continued to prevent edema. A third occasional operation which has been recommended for ulcers is the use of lumbar sympathectomy. Walking venous pressure tests in our institution,³ done before and after sympathetic block, show that sympathetic paralysis makes walking even less effective

since arterioles are dilated allowing more blood into the leg where the basic difficulty is removing the blood from the leg. The same physiology applies in summer when patients have more trouble with edema because of arterial vasodilatation from warm weather. Sympathectomy, therefore, is almost never indicated for the postphlebotic syndrome.

After the ulcer is healed continued anti-gravity and compression measures must be carried out by the patient in order to avoid recurrence. In some very intractable ulcers a pneumatic boot is of great help. This boot, applied to the ankle and inflated to 35 mm. pressure, allows a uniform degree of pressure at all times around the ankle. It is the most effective of all in diminishing and preventing edema and the recurrence of ulceration. Most important to reemphasize is the fact that this is a disease where the complications of ulceration can only be prevented by careful management of the leg by the patient himself in preventing edema. It, therefore, is the physician's prime responsibility to educate the patient as to the causes of the complications and their prevention.

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Editorials

MALPRACTICE IN ALABAMA

FRANCIS H. HARE

Birmingham, Alabama

Many articles have been printed on the subject of the rising tide of malpractice cases against doctors. The record in Alabama may demonstrate how the medical profession and the legal profession have contained and controlled the problem of malpractice cases.

In the first place, by actual count, the Supreme Court of Alabama has affirmed only one verdict against a doctor for malpractice in the past twenty years. That was in 1946. The verdict was for \$2,000 for an operative rupture of the urethra and the Supreme Court reduced it to \$1,000.*

There must be a reason for a mortality rate so nearly perfect. That reason was expressed by Judge Knight in the case of *Allen v. Snow*, 227 Ala. 615, 151 So. 468, in his opinion reversing a jury verdict against the doctor. Judge Knight remarked that the legal pro-

fession in this state realized that "There has never been but one 'Perfect Healer'."

It is not intended to give the impression that no insurance company in the past twenty years has paid a claim in a suit against a doctor in Alabama charging negligence. Some claims have been paid. But they were either consent settlements or they were decisions which were not appealed, and in neither did the doctor nor the insurance company feel that the result or amount was enough out of line to justify appealing the case to the Supreme Court of Alabama.

A claim was paid where the doctor frankly conceded that he had made a mistake and wanted to correct it. A claim was paid where a doctor sewed up a foreign object in an operative incision. A claim was paid where a doctor by mistake operated on the left member when the right member needed the operation. These are the exceptions which prove the rule. The judiciary and the lawyers would not have the deference and respect which they do have for the medical profession if the doctors denied liability in cases of flagrant mistakes and claimed to be above the law.

Lawyers in general practice are offered cases against doctors almost every day. Malpractice cases are not brought to the offices of corporation lawyers. They do not incubate there. They can defend but they cannot prevent them. The potential malpractice plaintiff offers his case to the legal general prac-

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* *Piper v. Halford*, 247 Ala. 530, 25 So. 2d 264.

itioner or the plaintiff's lawyer. The happy solution that exists in Alabama is the result of a conscientious attitude toward the medical profession on the part of those members of the legal profession.

The author assisted the Jefferson County Medical Society in forming a grievance committee to hear complaints of negligence against doctors. This committee holds hearings, and the complaining patient is given a full answer and explanation in reply to his complaint. Nothing is held back. The patient can see the chart, the pathologist's report, the X-rays. If a case of negligence is made out, the committee recommends that the doctor's insurance company make a fair settlement. The patient is spared the delay and expense of litigation.

On the other hand, usually the explanation satisfies the patient that there was no malpractice. A dramatic illustration is that of the sincere woman who complained that her surgeon mistook a pregnancy for a tumor and subjected her to an unnecessary operation. At the hearing the chart and the pathologist's report were exhibited to her showing that the doctor's diagnosis was entirely correct, that a harmful tumor was removed without interfering with her pregnancy. Only an unnecessary law suit was aborted.

Study and analysis result in a better understanding of the doctor's role. It is wrong to apply the same rule of negligence to a doctor that, for instance, is applied in products liability to one dealing with a mechanical device. The machinery was designed by man and is capable of perfect reconstruction. If necessary to avoid the slightest imperfection, the same man who invented and manufactured it can make a new one. At quitting time, if he has not finished, he can lay aside his tools and his unfinished operation until the next day. No blood flows in to obscure the

field where he is working with his hands. There is no pulse or respiration to watch.

But the doctor is working on a patient that he did not design or build. The human being is "fearfully and wonderfully made," and the finest doctor readily agrees that he would never claim to know all about his brain or his heart or his ailments. Therefore, fundamentally and inherently in what the doctor does perfect results are unattainable. If the law required perfect results, the doctor might well decline the assignment, saying that there can be no progress without mistakes.

If the doctor's diagnosis and treatment are right and successful nine times out of ten, but he is liable on the tenth occasion where diagnosis or treatment fails, either his task would be rendered entirely impossible or his charges would be increased to cover the exposure. Increased charges could pay for insurance, but they would not make up for the injustice.

Thinking it over, the lawyers have reflected that liability based on losing a case would be an extremely poor rule of law. The lawyer on one side or the other loses every case.

Moreover, we have come to realize that the doctor is at least on the right side of every case. He is always the advocate of a human being *versus* pain or death, and it is not his fault that by the law of nature every man is a case that some doctor must lose some day.

Upon this philosophy the two professions in this state have reached an accord. As a result malpractice litigation in Alabama has never reached epidemic proportions and never will. If the doctors in Alabama are paying high premiums on their malpractice insurance, they are paying them because of the loss experience in other states.

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DERMABRASION FOR FACIAL SCARRING

Many articles in lay magazines and some medical publications would lead one to believe that dermabrasion is a panacea for all facial scarring.

In the first place this was originated by a plastic surgeon and belongs strictly in the field of surgery. It is not an office procedure and must be undertaken in the best surgical manner. In my surgical experience it matters little what device is used. A simple wooden block wrapped with medium coarse sand paper is very effective.

The post-operative care should be meticulous for formation of a crust will certainly result in more scarring. The care and dressing of the wound must be impeccable.

Judgement in the choice of patients must be exact. Undulative scars with a great deal of sebaceous exudate will always give poor results. Delineated craters in a clear skin are the most amenable to treatment. One must be acutely aware of the tendency for scarring in blondes and red heads. Increased pigmentation often occurs in dark skinned individuals.

Milium appear in a large number of cases but usually disappear in about six weeks. Occasionally, they may have to be removed with a simple straight needle. In general, with proper care, the results can be gratifying. Let no one forget that one cannot promise the patient more than a moderate improvement. The incident of medical malpractice suits is high enough at the present time.

"Dermabrasions may possibly be here to stay." It was rather popular in the early 1900's but the results were poor; chiefly because of infection and general lack of good wound care.

Bruce C. Martin, M. D., F. A. C. S.
Anniston, Ala.

ARE YOU INTERESTED?

"If your Doctor is not interested in Medical Assistants—then go to work for one that is." These words were spoken by Dr. Leonard Larson, President of the American Medical Association, at the recent National Convention of the American Association of Medical Assistants held in Reno, Nevada, October 13-14-15, 1961.

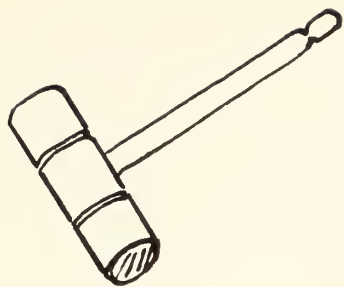
Are these words as shocking to you, the doctor, as to me the assistant? Much thought to this statement has prompted me to write this article for the State Medical Journal.

If a doctor has a medical assistant in his office and is not interested in her association, I believe the medical assistant is at fault. However, if she has proven to you that being a member of the American Association of Medical Assistants has enabled her to gain more knowledge for the purpose of being well informed, to be more helpful, more valuable and a better public relations agent for you, if she has taken advantage of the educational courses offered her as a member, if she has invited you to attend her monthly meetings, or be guest speaker for the evening, if she has discussed her association with you and explained the purpose and aims, asked your advice, or read her Constitution and By-Laws to you and you are not interested—then perhaps she is working for the wrong doctor. One cannot be interested without knowledge.

The express purpose of the American Association of Medical Assistants is for self improvement in our chosen field, the medical profession. We are grateful and pleased to have opened a new field and a chance to attain our desired recognition as we strive to become a very definite and valuable part of this profession.

If you have the opportunity to aid your assistant in attaining her goals to become a better employee for you, do not ignore it. Take time to discuss it with her. You can be assured that it will be to your advantage and the rewards will be numerous.

Ann Taylor, Vice President
Alabama Medical Assistants Association



President's Page

OUR CHALLENGE

As our State Association enters a new year, we are confronted with various problems. It is imperative that our attention be focused on certain problems concerning care for the aged.

The Kennedy administration and other main supporters of medical care of the aged under social security are preparing to make an all-out effort to push legislation through Congress in the 1962 session. Their campaign poses a serious challenge to the medical profession, for the real issues are being clouded by emotional appeals.

We are interested in seeing that good medical care is provided at the community level for all people who need it. The financial status of the people involved does require consideration. There are people in every community who require help for various reasons. Some of these reasons are aging, infancy, catastrophic circumstances, and unforeseen events. The ones who are in need vary from time to time. We doctors know well that these people "out of luck" must be taken care of, and we have always been able to offer them help. We do not need to sell ourselves on the advantages of providing these needs on a local community level rather than on a federal basis which is remote from the scene of need. A great many of our business friends feel the same way. In nearly every community the care of the medically indigent is an acute problem, one that lies at our doorstep.

What are we really doing to organize community resources designed to solve the prob-

lem? Are we making all the effort that each of us can to emphasize and present this urgency to our friends and neighbors? We know the many dangers and possible mistakes which inhere to the dependents of federal aid. We know federal aid will be much more expensive and will have more lost motion than care on a community basis. It is true that local care will cost money too, but we will be willing to share the cost. We must do everything we can to impress upon our municipal and county officials their duty in this matter, for local medical aid will cost less money.

We believe that the next few months will be a critical time for all physicians, and we must take a more active part in soliciting the support of all our citizens who are fearful of too much centralized government. This is certainly one very humane and vital area in which we can unite with our friends and neighbors our efforts in the solution of this problem rather than by persons whose interest is largely political, even if presumably well-meant.

Please give your thoughts and effort to finding for once and for all a solution to these problems in your own community. A combined effort by doctors and laymen will convince our representatives in Washington that their constituents want local direction of local problems.

John W. Simpson, M. D.



ASSOCIATION FORUM

Hospital Care and Its Financing

Nearly one out of every two persons admitted to voluntary short-term hospitals in 1960 had hospital expense insurance issued by insurance companies. (Over-all, about four out of five hospitalized patients have some form of health insurance.) Some \$4 million a day in insurance company benefit payments flowed to hospitals last year to help finance the cost of patient care.

Underlying this economic relationship is the rapid expansion of the health insurance business. During the nineteen-fifties, the number of people substantially protected against hospital bills by insurance company programs and plans more than doubled—rising from 37 million Americans in 1950 to nearly 79 million by the end of last year.

Benefit payments by companies for hospital expense have risen at an even faster rate, more than tripling in an eight year period—from \$437 million in 1952 to some \$1.5 billion in 1960. This reflects a significant increase in breadth of protection for the average insured family. Payments for the first half of 1961—an estimated \$687 million—already exceed **total annual** benefits paid by

companies as late as 1954 (\$615 million) in reimbursement for hospital care.

Because many persons elect to pay a hospital bill directly and then submit the claim to the insurance company for reimbursement, the economic impact of these benefit payments may not be fully apparent to the hospital administrator. Increasingly, though, the insured patient assigns benefits directly to the hospital.

Consider too the diversity of the insurance business as a source of hospital income. In addition to hospital insurance, major medical and comprehensive expense insurance—to-day covering over 31 million people—provide reimbursement for virtually every type of hospital service (plus of course, most treatment rendered outside the hospital).

Loss of income insurance, carried under insurance company programs by some 32 million Americans, also contributes, directly or indirectly, to hospital revenue. These policies provide weekly or monthly benefits to replace income lost by the family breadwinner due to illness or injury. Under many of these plans, average benefits are increased

during the period of hospitalization. Income maintenance thus makes it possible for families to meet expenses, including hospital bills, and still preserve their standard of living.

Other sources of hospital reimbursement include personal liability insurance, workmen's compensation, and disability provisions in life insurance policies.

Vigorous competition is the hallmark of the health insurance business. Competition, not only among the more than 800 insurance companies actively issuing group and individual health insurance policies but with all other types of health insuring organizations, assures experimentation and flexibility in the

range of contract provisions and benefit and premium levels.

Most families today look to health insurance as a social device for effective pooling of risks and sharing of costs. Health insurance substantially eases the economic burden of illness and disability. It minimizes the economic barrier to obtaining needed care. It represents a major source of income for hospitals, helping to stabilize their financial structure and reduce collection problems.

Serving the public interest requires joint cooperation of hospitals and health insurers if the needs and expectations of the American people are to be fulfilled.

Methods of Providing Protection

GROUP HEALTH INSURANCE

- By far the greater number of persons with insurance company hospital expense coverage—over 55 million—have group protection.
- Nearly 20.6 million workers had hospital expense insurance through their place of employment at the end of 1960, with more than 34 million of their dependents also protected—thus for every three insured employees, there are at least five dependents at home who are covered.
- Some 474 insurance companies provide group health insurance, a rise of 98 per cent during an eight year period from the end of 1952 to year-end 1960.
- The group policyholder most frequently is an employer or union but may be other type of organization—with one master contract covering all insured members.
- Advantages include lower premium (often paid or shared by policyholder) due to lower administrative costs, with no medical examination required, thus assuring coverage regardless of physical condition.

INDIVIDUAL HEALTH INSURANCE

- Some 33 million persons have individual and family hospital insurance policies issued by insurance companies.
- A new high of 728 insurance companies provide individual and family health insurance protection, an increase of 49 per cent from the end of 1952 through 1960.
- At the 1960 year-end, some 149 insurance companies were issuing guaranteed renewable health insurance policies (protection which cannot be terminated by company up to stated age limit or even for lifetime and in which premiums can be adjusted only for entire class of policyholders).
- Contract is made directly between individual and insurance company and differs from group insurance in several other respects; notably, from the hospital's standpoint in benefit identification and claims information procedure.
- Advantages are flexibility of policies in meeting individual needs and protection offered to those not under a group plan or desiring supplementary coverage.

Free Medical Care For The Aged

EDWARD WIMMER

Cincinnati, Ohio

Crocodile tears are being shed in Washington and elsewhere over the plight of the old folks, and political leaders agree that a little more socialized medicine via the social security route is a must.

The unions have been shouting for it; the drug investigation fed it ammunition; hospital officials think it will be another bonanza; and the worst critics of the medical profession see it as "a chance to get even with the doctor and the industry" probably responsible for their being alive.

Life expectancy in the United States is up from 47 years in 1900 to 70 in 1959.

Cost of pneumonia in 1940, 3 months' wages of average man for hospital bill. In 1959, 5 hours' wages for medicine and a few days in bed at home.

Polio 85 per cent decrease over 1940.

Diphtheria, 16,000 persons stricken in 1946 and fewer than 1,000 in 1959.

50,000 deaths from tuberculosis in 1945, a fourth as many in 1959.

Rickets, scurvy, scarlet fever, infant diarrhea—almost gone.

7,000 children died from whooping cough in 1940, and 310 in 1959.

Similar progress shows up in hundreds of other diseases, but only the bad side is given by the advocates of socialized medicine.

Socialized medicine contains a potential for graft, corruption, waste, and disillusionment of incredible proportions. It destroys the personal relationship between the patient and the practitioner. It ushers in a tax-financed bureaucracy that is gaged to human suffering; and once fastened upon a nation, its hold is only loosened by its own collapse.

Consider that social security taxes now take more from some people than income taxes, that old age and other OASI bills total \$16 billion annually, and that every year new proposals are made to enlarge the social security program.

Nothing is ever said about the youth of the nation who are taxed all through their lives to maintain a high-cost government care and pension program more expensive than anything of a private nature, and well on its way to a point where it could easily become an intolerable burden.

The debate on health care for the aged will become, we think, one of the most crucial the nation has witnessed for a number of years. For at stake will not be simply the question of whether some 10 or 15 million aged and aging Americans are to get public assistance in meeting health problems but whether the nation's

Mr. Wimmer is vice president of the National Federation of Independent Business, Inc.

medical services—the finest in the world—are to remain free or whether they are to fall under the domination and dictation of the federal government.

No one denies that thousands of aged Americans are not receiving the medical and hospital care they want and need. But neither are thousands of American babies, thousands of young and middle-aged Americans. If free medical care for those over 65 is right and proper, free medical care for those under 65 is equally right and proper. And if Congress is pressured into granting one today, it is folly to suppose it will resist the pressure to grant the other tomorrow.

The other point is that medical care for the aged is simply a first step, an opening wedge. The ultimate goal is the complete federalization of the nation's medical and hospital services—a measure the welfare-statists have been advocating since the days of the Wagner-Murray-Dingell bill.

This is our first objection to the proposed program for medical care for the aged: It would simply be the first step toward socialized medicine for all Americans.

Our second objection is that what the federal government pays for it eventually controls. The advocates of medical care for the aged, of course, deny that this is the case. But there is an interminably long list of examples to prove that it is. Wherever the federal government provides the funds—for municipal airports, for housing and slum clearance, for education and research grants—it eventually attaches conditions and sets standards. It could be argued that it would be wrong for it to do otherwise. But the fact remains that federal subsidization means federal control.

Our third objection stems from financial precariousness of the social security system itself.

In the first 25 years of its existence, social security took in some \$70 billion through compulsory taxes on the earnings of American workers. During the same period, it paid out \$50 billion in benefits. At the end of 25 years, it had \$20 billion left in assets and, at the present rate of benefits, \$360 billion in obligations. For every dollar social security now has in the till, in other words, it must eventually pay out \$18 in benefits.

This means, among other things, that the nation's younger workers, who generally need every penny to meet present obligations, must be taxed for the rest of their working lives to pay for free medical care for aged and aging Americans, including millions able and willing to care for themselves.

This leads to our fourth objection to the medical care plan: It is a compulsory program for which all Americans covered by social security must pay, regardless of whether they want or need the benefits provided.

There has been such a powerful propaganda campaign in behalf of medical care for the aged within the last few years that opposing it is very much like opposing motherhood, patriotism, and virtue itself.

Nothing, to be sure, touches the hearts of the American people more forcefully than the picture of aged men and women who find themselves, after a lifetime of toil, incapable of providing the medical care and hospitalization they need.

The plight of these aged Americans is an evil that the nation, the states, and the communities of America must work to overcome, just as they must work to overcome juvenile crime, ignorance, and poverty in all its other forms.

To maintain, however, that the only answer, or even the best answer, is to force all Americans into a compulsory system of federal medical insurance is to advocate a system that would inevitably become a greater evil than the one it is designed to remedy.



around the state



DR. PRIESTLEY

AMERICAN COLLEGE OF SURGEONS

The Alabama Chapter of the American College of Surgeons will hold its annual scientific meeting at the Stafford Hotel in Tuscaloosa on January 19-20. Among the prominent physicians appearing on the program are Dr. James T. Priestley, professor of surgery of the Mayo Foundation Graduate School of the University of Minnesota; Dr. Howard Rusk, chairman and professor of rehabilitation of New York University and Bellevue Hospital; Dr. John Todd Reynolds, attending surgeon of Presbyterian-St. Luke's Hospital and professor of surgery at the University of Illinois College of Medicine; Dr. Richard T. Farrior, plastic surgeon and oncologist of Tampa, Florida; Dr. Richard A. Harris, clinical assistant professor of surgery at the Medical College of Alabama, and Dr. Thomas H. Williams, Jr., Montgomery.



DR. RUSK



DR. REYNOLDS



DR. HARRIS



DR. FARRIOR



DR. WILLIAMS

OBITUARIES

BRYAN—James Lafayette Bryan, M. D., Greenville, died October 19, 1961 at the age of 89. He received his medical degree from the University of Alabama and did post-graduate work at Johns Hopkins University. He had practiced in Greenville for 60 years.

He held various offices in the Medical Association of the State of Alabama and was past president of the Butler County Medical Society.

Dr. Bryan served as a deacon of the Greenville Baptist Church for over 50 years and was moderator of the Butler County Baptist Association.

He is survived by two daughters, Miss Elizabeth Bryan of Montgomery and Mrs. E. R. Taylor of Phenix City; a son, Rev. Shepard Bryan of Gainesville, Florida; a grandson, and seven sisters.

COLLINS—Henry Clovis Collins, M. D., Montgomery obstetrician and gynecologist, died November 24, 1961 at the age of 52. He attended Cloverdale and Starke schools in Montgomery before receiving his medical degree from Emory University School of Medicine. He interned and served the first year of his residency at Grady Hospital in Atlanta, Georgia. Dr. Collins completed his second and third year of residency work in obstetrics and gynecology at St. Elizabeth Hospital in Youngstown, Ohio, and Erlanger Hospital in Chattanooga, Tennessee.

During World War II, he served in U. S. Medical Corps as a major.

Dr. Collins was a member of the Montgomery County Medical Society, Medical Association of the State of Alabama, and the American Medical Association. He was on the staff

of St. Margaret's, St. Jude's, Jackson, and Professional Center Hospitals.

Survivors include the widow, Mrs. Olive Weeks Collins, Montgomery; three sons, John Penton, James Clovis, Henry William Collins; a daughter, Mrs. George Alexander of South Carolina; and a brother, Charles J. Collins of Montgomery.

DEWITT—William Frank DeWitt, M. D., Selma, died in the Maxwell Air Force Hospital in Montgomery on September 22, 1961 at the age of 59.

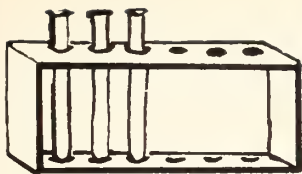
He received his medical degree from Baylor University College of Medicine in 1924 and was commissioned in the medical corps of the U. S. Army in 1925. He was transferred to the U. S. Air Force in 1949 and retired as a colonel in June, 1957. He was recipient of the Legion of Merit, Bronze Star, and the National Defense Service Award.

Dr. DeWitt has been health officer of Dallas County since his retirement. He was a member of the Dallas County Medical Society, Medical Association of the State of Alabama, and American Medical Association.

LITTLEPAGE—George Frederick Littlepage, M. D., Sheffield, died December 3, 1961 at the age of 76. He attended Tulane University School of Medicine and had practiced in Sheffield since 1918.

Dr. Littlepage was a member and past president of the Colbert County Medical Society and the local Kiwanis club. He was a member of the First Methodist Church.

He is survived by a son, G. F. Littlepage of Butler; a sister, Mrs. Robert Harwell of Ward; and two brothers, Henry and Connie T. Littlepage of Mt. Sterling.



STATE DEPARTMENT OF HEALTH

RECOMMENDATIONS OF STATE AND TERRITORIAL HEALTH OFFICERS

The Association of State and Territorial Health Officers held its annual conference with the Surgeon General of the Public Health Service and the Chief of the Children's Bureau early in November.

Radiation hazards proved to be of major concern to the health officials. They issued a special resolution advocating that primary responsibility for health and safety factors be vested in the Public Health Service of the federal government and in the health departments of state governments. The resolution also called for "concurrent federal and state jurisdiction in control of both construction and operation of facilities for the production or utilization of special nuclear material which presents hazards of accidental criticality, such as nuclear reactor plants." Measures recommended to strengthen radiation protection programs included development of uniform radiation protection standards at all levels of government, using the information now available from federal agencies, and the provision of more federal aid to states for surveillance and control of radiation hazards.

Other resolutions passed by the Association called for: a national census at five-year rather than the present ten-year intervals; establishment of a special Bureau of Environmental Health in the Public Health Service; a national conference to review educational programs for preparing public health personnel; state and local legislation authorizing public health agencies to accept fees for home care services to the ill and disabled; and support of the Fifth International Conference on Health and Health Education which meets in Philadelphia in July 1962.

Recommendations proposed by the groups' 12 working committees and adopted by the Association covered every facet of health

from control of all types of pollution to the eradication of brucellosis in hogs, the major cause of human brucellosis. Among these recommendations were:

Civil Defense—A Presidential executive order should designate the Department of Health, Education, and Welfare as the national agency responsible for the civilian health defense mobilization program. The program should be adequately financed and should include special grants to state health departments. From existing grants to states, \$2,000,000 should be earmarked for self-help and shelter health programs.

Environmental Health—The health officials recommended stronger air pollution control programs, including more federal aid to states and communities. They also recommended that the Public Health Service design sanitation programs for harbors, ports, recreational and inland waters (including discharge of waste from vessels) which state and local sanitation agencies can carry out. They recommended that a program be designed to regulate the sanitation of buses, bus depots, and bus servicing facilities.

Communicable Disease—Tightening of requirements to report names of persons with active cases of venereal disease, and other measures including more federal aid for stamping out venereal disease were recommended; also studies of oral polio vaccination programs which might offer guidelines for future community programs to control other infectious diseases.

Chronic Diseases—There should be a full-time physician in charge of state health department chronic disease programs and more assistance should be given to communities to increase services to the chronically ill and aged, particularly those who are not in hospitals.

DEPARTMENT OF HEALTH

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1961

	Oct.	Nov.	E. E. Nov.
Tuberculosis	89	98	164
Syphilis	117	111	127
Gonorrhea	365	263	275
Chancroid	1	3	3
Typhoid fever	3	0	3
Undulant fever	0	0	0
Amebic dysentery	0	4	1
Scarlet fever and strep. throat	41	79	76
Diphtheria	0	3	23
Whooping cough	0	0	46
Meningitis	5	10	10
Tularemia	0	0	0
Tetanus	1	0	3
Poliomyelitis	0	2	9
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	21	59	45
Chickenpox	3	4	47
Mumps	11	27	53
Infectious hepatitis	125	84	24
Typhus fever	1	0	1
Malaria	0	0	0
Cancer	727	433	462
Pellagra	3	0	0
Rheumatic fever	22	17	8
Rheumatic heart	20	28	13
Influenza	2	64	281
Pneumonia	100	156	178
Rabies—Human cases	0	0	0
Pos. animal heads	3	0	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

SPECIMENS EXAMINED

November 1961

Examinations for malaria	5
Examinations for diphtheria bacilli and Vincent's	31
Agglutination tests	400
Typhoid cultures (blood, feces and urine)	265
Brucella cultures	5
Examinations for intestinal parasites	2,056
Darkfield examinations	0
Serologic tests for syphilis (blood and spinal fluid)	21,454
Examinations for gonococci	1,590
Complement fixation tests	84
Examinations for tubercle bacilli	3,441
Examinations for Negri bodies (smears and animal inoculations)	193
Water examinations	2,078
Milk and dairy products examinations	3,821
Miscellaneous examinations	7,858
Total	43,281

Dothan Branch Laboratory report not received in time to be included with this report.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA

SEPTEMBER 1961

Live Births	Number Registered During September 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Deaths						
Causes of Death						
Live Births	7,496	4,780	2,716	27.6	28.5	29.1
Deaths	2,363	1,497	866	8.7	8.3	8.0
Fetal Deaths	161	69	92	21.0	20.0	22.7
Infant Deaths—						
under one month	176	99	77	23.5	20.8	20.1
under one year	238	115	123	31.8	27.6	25.6
Maternal Deaths	7		1	9.1	3.8	8.9
Causes of Death						
Tuberculosis, 001-019	22	13	9	8.1	9.3	8.7
Syphilis, 020-029	13	2	11	4.8	0.7	1.9
Dysentery, 045-048					1.5	
Diphtheria, 055					0.4	
Whooping cough, 056						0.4
Meningococcal infections, 057	1		1	0.4	0.4	0.8
Poliomyelitis, 080, 081						0.4
Measles, 085						
Malignant neoplasms, 140-205	323	231	92	118.9	127.2	113.9
Diabetes mellitus, 260	35	23	12	12.9	14.9	10.9
Pellagra, 281	1	1		0.4		
Vascular lesions of central nervous system, 330-334	321	201	120	118.2	104.8	115.8
Rheumatic fever, 400-402					0.4	1.1
Diseases of the heart, 410-443	769	511	258	283.1	263.6	262.6
Hypertension with heart disease, 440-443	144	60	84	53.0	47.7	47.5
Diseases of the arteries, 450-456	68	44	24	25.0	18.6	17.0
Influenza, 480-483	4	3	1	1.5	1.9	0.4
Pneumonia, all forms, 490-493	42	22	20	15.5	15.3	15.1
Bronchitis, 500-502	2	2		0.7	2.2	1.5
Appendicitis, 550-553	1		1	0.4	1.5	1.1
Intestinal obstruction and hernia, 560, 561, 570	16	9	7	5.9	7.8	2.6
Gastro-enteritis and colitis, under 2, 571.0, 764	22	2	20	8.1	7.5	3.4
Cirrhosis of liver, 581	15	10	5	5.5	7.8	6.0
Diseases of pregnancy and childbirth, 640-689	7		7	9.1	3.8	8.9
Congenital malformations, 750-759	40	29	11	5.3	5.0	3.6
Immaturity at birth, 774-776	43	18	25	5.7	6.0	7.0
Accidents, total, 800-962	138	104	34	50.8	51.8	44.5
Motor vehicle accidents, 810-835, 960	71	58	13	26.1	23.9	24.1
All other defined causes	391	240	151	143.9	123.4	122.6
Ill-defined and unknown causes, 780-793, 795	89	32	57	32.8	37.3	37.0

*Rates: Birth and death—per 1,000 population
 Infant deaths—per 1,000 live births
 Fetal deaths—per 1,000 deliveries
 Maternal deaths—per 10,000 deliveries
 Deaths from specified causes—per 100,000 population

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

February 1962

No. 8

Carcinoma Of The Stomach

ALTON OCHSNER, M. D., F. A. C. S.

JOHN BLALOCK, M. D., F. A. C. S.

FRANK McPHERSON, M. D.

New Orleans, Louisiana

At a time when the incidence of cancer of most organs is increasing, it is of particular significance that the incidence of carcinoma of one organ, the stomach, which has offered a poor prognosis in the past, is decreasing. The mortality rate of gastric cancer in the United States decreased from 18.3 per 100,000 population in 1946 to 12.1 per 100,000 in 1958.¹ A decrease in incidence of gastric cancer has occurred in England² but this has not been as great as in the United States. A similar decrease in the incidence of gastric cancer in Norway since 1920 has been reported.³ However, in Japan the incidence of gastric cancer is increasing.²

It is interesting to speculate on the reason for the decrease in incidence of gastric cancer in the United States. There are only two organs in which the incidence of cancer is decreasing: the stomach and the cervix. In the latter instance, the decrease is undoubtedly due to the fact that women, who are more cancer-conscious than men, consult their physicians more often so that precancerous lesions are detected and treated before malignant changes in the cervix occur.

A similar reason is probably responsible for the decrease in the incidence of gastric cancer. In the United States a number of physicians believe that gastric ulcer, in contradistinction to duodenal ulcer, is primarily a surgical lesion that should be treated by gastric resection. The main reason for this is the difficulty and at times impossibility of differentiating between a benign and malignant ulcerating lesion of the stomach. Also, the results of surgical treatment of gastric ulcer are better than those of conservative treatment. Finally, by surgical removal of what we believe to be a potentially malignant lesion (although this is not generally accepted by pathologists), the incidence of gastric cancer will be decreased.

Dr. Ochsner is a graduate of the University of Washington School of Medicine in St. Louis and president of Alton Ochsner Medical Foundation and director of surgery of Ochsner Clinic and Ochsner Foundation Hospital in New Orleans.

Dr. Blalock is a graduate of University of Pennsylvania and Dr. McPherson received his medical degree from Tulane University School of Medicine.

From the department of surgery, Ochsner Clinic, New Orleans.

Presented at the First Dixie Postgraduate Assembly, July 13, 1961, Birmingham, Alabama.

It is indeed fortunate that the incidence of gastric cancer is decreasing, because once the disease is clinically diagnosable, available treatment has yielded poor results. Although gastric cancer has been known since antiquity, little has been accomplished toward curing this dreaded disease in spite of tremendous improvements in modalities of therapy.

In order to improve the results in the treatment of gastric cancer many have suggested total gastrectomy for all cases. However, our experience has convinced us that if the lesion is limited to the distal half of the stomach, equally good or better results will be obtained by radical subtotal resection of the stomach as by total gastrectomy. By radical subtotal resection we mean removal of all the omentum (the gastrohepatic, the gastrocolic and the greater omentum), the first portion of the duodenum, all the lesser curvature of the stomach up to the esophagus, the greater curvature of the stomach up to within about 6 or 7 cm. of the esophagus, the spleen and gastrosplenic ligament, all the nodes around the esophagus, celiac axis, and left gastric vessels, the nodes in the gastrohepatic ligament, the subpyloric and the gastrosplenic nodes. Gastrointestinal continuity is re-established by closing the duodenum blindly and performing end-to-side anastomosis between the lower end of the stomach and the side of the jejunum. Preservation of the small gastric pouch, although not much larger than a man's thumb, is usually responsible for the paucity of symptoms after such a procedure. The absence of symptoms is due not to the pouch but probably to preservation of a few of the left vagus fibers.

The reported five-year survival rates of patients in whom a clinical diagnosis of gastric cancer can be made is tragically low—slightly more than five per cent. Therefore, if good results are to be obtained, surgical extirpation must be done earlier, preferably before the clinical diagnosis of cancer is made. This means that precancerous lesions should be excised. These include gastric ulcers, which may appear benign but are actual-

ly malignant, gastric polyps, certain cases of chronic gastritis, especially those associated with pernicious anemia (because the incidence of gastric carcinoma in patients with pernicious anemia is 15 times greater than in the average population), and finally, in a few individuals, particularly men older than 40 years, in whom unexplained anorexia develops associated with loss of weight which does not respond favorably to conservative therapy and in whom no evidence of malignant lesion can be found. In this last group if carcinoma of the stomach is found on exploration, it is usually resectable. We have had six such patients with no laboratory evidence of cancer in whom at laparotomy small malignant lesions were found which apparently have been cured by radical resection.

In our series of 342 cases of proved gastric carcinoma in which a clinical diagnosis could be made preoperatively, 68 per cent were males and 32 per cent females. The average age was 60 years. The highest incidence was in the seventh decade (approximately 37 per cent) followed in frequency by the sixth and eighth decades. Three per cent of the males and eight per cent of the females were younger than 40 years, however. The principal clinical manifestations were pain (81 per cent), nausea (59 per cent), anorexia (57 per cent), simple vomiting (45 per cent), retention vomiting (21 per cent), melena (20 per cent), and dysphagia (18 per cent). The average duration of symptoms was eight months. The primary physical sign was loss of weight (87 per cent). The average loss of weight was 25 pounds in seven months. Other physical findings in order of frequency were tenderness (47 per cent), palpable mass (41 per cent), and palpable spread (17 per cent).

The lesion was described by the pathologist as diffuse in 66 per cent, ulcerative in 23 per cent and polypoid in 11 per cent.

In 12 per cent of the patients, the lesions were inoperable. In the remaining 88 per cent the lesions were considered operable, but eight per cent of these patients refused surgi-

cal treatment so that only 80 per cent had exploratory operations. Of these 80 per cent, 40 per cent were resectable and 40 per cent non-resectable. Radical distal subtotal resection was done in 66 per cent of the patients, total resection in 21 per cent, and proximal subtotal resection in 13 per cent with operative mortality rates of seven per cent, ten per cent, and 27 per cent, respectively. In 26 per cent the lesion was apparently limited to the stomach and grossly had not extended to adjacent viscera or lymph nodes. In the remaining 74 per cent it had extended beyond the stomach and resection was considered palliative although in many of these actual cures were obtained.

Ninety-five per cent of all those operated on seen more than five years ago were followed. None of the 162 patients whose lesions were not resected survived five years. The five-year survival rate in the entire series was ten per cent. In those whose lesion had extended beyond the stomach it was 13 per cent. The five-year survival rate for all resections was 26 per cent and for those whose lesions were apparently limited to the stomach it was 58 per cent.

Radical subtotal resection is apparently satisfactory if the lesion is limited to the distal half of the stomach. In 90 patients who had radical distal subtotal resection the five-year survival rate was 34 per cent. None of the patients who had proximal lesions treated by proximal subtotal resection lived as long as three years, and in 29 patients who had total resection the five-year survival rate was 15 per cent. The prognosis was best in patients with ulcerative lesions (27 per cent); the five-year survival rate in those with polypoid lesions was 20 per cent and in those with diffuse lesions two per cent.

Among factors affecting the prognosis was sex; the five-year survival rate was slightly lower in males (nine per cent) than in females (13 per cent). The age of the patients affected the resectability incidence somewhat; thus, lesions were resected in 33 per cent of those younger than 60 years of age and in 40 per cent of those older than 40 years

of age. However, the five-year survival rate was ten per cent in both groups. The duration of symptoms influenced the prognosis, not so much as regards resectability as five-year survival. Lesions were resectable in 38 per cent of those with symptoms less than nine months. However, the five-year survival rate in those who had symptoms less than seven months was seven per cent as contrasted with 16 per cent for those who had symptoms more than nine months. The better prognosis in the former group is due to either a slower growing tumor producing less severe symptoms over a longer period of time or to the fact that the lesion was originally a benign one, such as an ulcer, which later became malignant.

Loss of weight was an important prognostic sign. In those who had lost less than 25 pounds the five-year survival rate was 15 per cent, whereas in those who had lost more than 25 pounds the five-year survival rate was ten per cent. To recapitulate, 80 per cent of the patients in the entire series had exploratory operations, 40 per cent had resections, ten per cent had five year cures, and 7.5 per cent had ten year cures.

Conclusion

Although the incidence of cancer of the stomach fortunately is decreasing, the results of treatment, once a diagnosis is made, are disappointing. Results can be improved only by earlier diagnosis. This can be accomplished by resorting to surgical exploration rather than waiting until the lesion is clinically diagnosable as cancer of the stomach. This enables removal of potentially malignant lesions of the stomach before they can become cancerous.

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Anatomic Considerations

In Preperitoneal Hernioplasty

LLOYD M. NYHUS, M. D., F. A. C. S.

ROBERT E. CONDON, M. D.

Seattle, Washington

Hernias of the inguinal region constitute a common and important surgical entity. Despite a great deal of effort over the past century, the final solution of the problems presented by groin hernias has by no means been reached. Difficulty in obtaining the adequate exposure needed for anatomic repair of such hernias, and the continuing presence, in some hands, of high recurrence rates assures a continuing interest in the surgical solution of these problems.

Some years ago while repairing a femoral hernia using the Cheatele-Henry^{1,2} approach we were impressed with the exposure that

this preperitoneal technic afforded. We were cognizant that although femoral hernias could be treated by this approach, few advocated its use for direct and indirect hernias. In 1955, we began to investigate the use of the preperitoneal approach for the repair of all types of groin hernias.

In the course of this clinical investigation, we encountered anatomic structures present in the posterior inguinal wall which were not adequately described or were completely ignored in standard textbooks of gross or surgical anatomy. We were stimulated by this experience to undertake a re-investigation of the surgical anatomy of the groin, despite the fact that this area has received recent intensive investigative attention by anatomists and surgeons.

Our studies began with embalmed cadavers in the gross anatomic dissection rooms. These efforts were soon abandoned for two reasons; first, to avoid the artifacts induced by the embalming process, and second to circumvent the limited availability of material. We continued our investigations in the autopsy room and have now completed over one hundred groin dissections of unfixed bodies.

Dr. Nyhus is a graduate of the Medical College of Alabama and is an associate professor in the department of surgery at the University of Washington School of Medicine.

Dr. Condon received his medical degree from the University of Rochester School of Medicine and Dentistry and is an instructor in surgery at the University of Washington School of Medicine.

From the department of surgery, University of Washington School of Medicine.

Presented at the First Dixie Postgraduate Assembly, July 12-14, 1961, Birmingham, Alabama.

In the course of these dissections we encountered a hitherto unemphasized structure, the iliopubic tract (Figure 1). The iliopubic tract is a band of fibrous tissue which reinforces the transversalis fascia of the posterior inguinal wall, being situated within and inseparable from the transversalis fascia in the central portion of the groin. It is constantly present, though the density of its structure is subject to wide variation. Its course parallels that of the inguinal ligament, which may account for its frequent mislabeling in other descriptions.

Laterally, the fibers of the iliopubic tract are attached to the iliopectineal band and to a broad band of fibrous tissue which parallels the crest of the ilium. This fibrous band at the lateral insertion of iliopubic tract provides attachment for all the abdominal musculature in this region as well as for the intrapelvic muscles. In the immediate region of the iliac crest and the anterior superior iliac spine all of the various musculoaponeurotic and fascial structures are intimately bound together and a laminar separation or dissection of the various layers of the groin is not possible.

A few centimeters medially, however, the various laminae of the abdominal wall become clearly separable. Here the fibers of the iliopubic tract pass beneath the internal abdominal ring and arch over the femoral vessels, firmly bound and inseparable from the anterior and medial aspects of the femoral sheath. In this area, the inguinal ligament occupies a position immediately anterior or external to the iliopubic tract. The two structures are easily separated, however, since the inguinal ligament, which anatomically belongs to the external oblique lamina of the groin, is not tightly bound to the femoral sheath.

Medially the fibers of the iliopubic tract curve inferiorly and are inserted together with the transversalis fascia into the superior ramus of the pubic bone along the line of junction of Cooper's ligament and the pectineus fascia. Thus, it is the iliopubic tract,

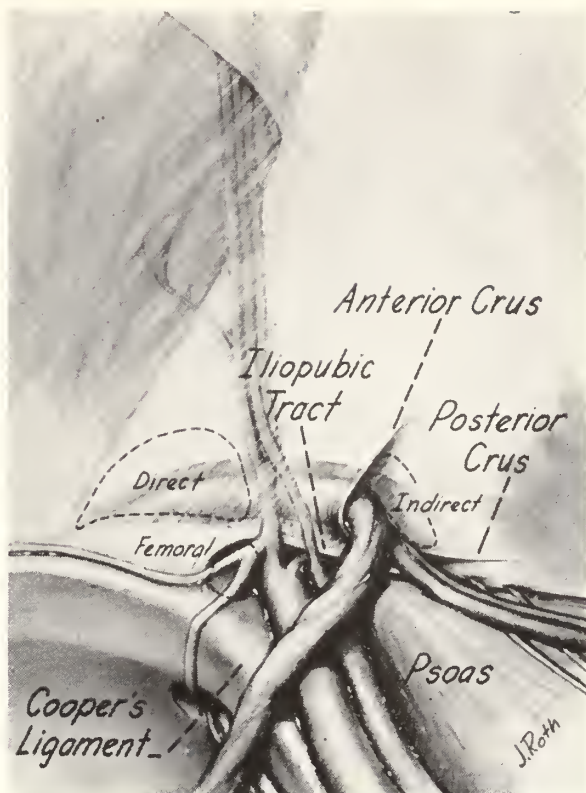


Figure 1. The posterior inguinal wall viewed from the preperitoneal side. The peritoneum and all preperitoneal fat and lymphoid tissue have been excised exposing the transversalis fascia. The areas through which the three common groin hernias occur are indicated as are the transversalis fascia analogues which are utilized in preperitoneal hernioplasty.

not the lacunar ligament which defines the abdominal ostium of the femoral sheath and forms the medial border of the femoral canal. In this region, the inguinal ligament is situated more anteriorly, separated from the iliopubic tract and other structures of the posterior inguinal wall by the interposed spermatic cord.

The importance of the iliopubic tract to the student of groin hernia is now apparent. The iliopubic tract is the key to understanding the surgical anatomy of groin hernias since all of the common hernias occur in relation to it. An indirect inguinal hernia occurs by disrupting the transversalis fascia at the internal abdominal ring, the hernial sac passing outward above the iliopubic tract and lateral to the structures of the spermatic cord. In femoral hernia, the sac of peritoneum and

bowel protruding down the femoral canal passes beneath the iliopubic tract. As the femoral hernial sac enlarges distally it finds more and more room for expansion. At the ostium of the femoral canal, however, the unyielding iliopubic tract forms a constricting band about the neck of the hernia and provides the anatomic basis for the complications to which this hernia is so liable. A direct hernia occurs through a rent in the posterior inguinal wall, the hernia sac passing outward above the iliopubic tract and Cooper's ligament; the enlargement of the direct hernial sac is limited by the iliopubic tract and associated structures so that any increase in size must occur in a superior direction.

With the understanding of the anatomy of groin hernias afforded by a knowledge of the anatomy of the iliopubic tract, the understanding of the repair of such hernias by the preperitoneal technic is straightforward.

Our technic for conducting the preperitoneal repair of groin hernias has been previously published in detail.³ In brief, the preperitoneal space and the neck of the hernial sac are exposed through a transverse inguinal incision placed two fingers breadth above the line of incision for the conventional inguinal hernia repair. The incision is carried down through the subcutaneous tissue, the anterior sheath of rectus and the oblique and transversus aponeuroses are incised, and the rectus muscles are retracted medially, exposing the transversalis fascia. The transversalis fascia is incised transversely being careful not to enter the peritoneum which lies immediately subjacent. The preperitoneal space has now been entered, and blunt dissection in an inferior direction rapidly exposes the site of herniation.

The hernia sac is reduced by traction, and an optimum high ligation is performed flush with the surface of the peritoneum. Previous descriptions by us and others have emphasized to all surgeons the laminar structure of the abdominal wall and the fundamental importance in groin hernial repair of an anatomic restoration of the integrity of the transversalis fascia lamina. The preperitoneal

technic achieves the optimum exposure of this lamina and provides the conditions for an optimum hernioplasty.

A direct hernial defect is closed by approximating the margin of the hernial defect above to iliopubic tract below. This obviates carrying the sutures all the way down to Cooper's ligament and consequently allows anatomic repair under no tension. In the repair of an indirect hernia, the transversalis fascia lamina at the internal ring is restored by suturing the heavy, anterior crus of the internal ring to iliopubic tract, placing sutures both medial and lateral to the spermatic cord, and restoring the cord and the internal abdominal ring to a normal position. A femoral hernia is repaired by suturing iliopubic tract above to Cooper's ligament below. In short, hernioplasty by the preperitoneal route involves doing the obvious: suturing the superior margin of the hernial defect to the inferior margin, thus restoring the integrity of the transversalis fascia; in such repairs, the iliopubic tract is extensively utilized.

We have repaired 408 groin hernias by the preperitoneal route; these patients have been followed closely and all were last seen or contacted within the past two months. Our first patient was repaired six years ago and the entire group has been followed for an average of three years. We have had eight hernias recur or a two per cent recurrence rate.

On the basis of our present experience, we are encouraged to continue our study of preperitoneal hernioplasty utilizing transversalis fascia and its analogues for the repair of all groin hernias.

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2. Henry, A. K.: Operation for femoral hernia by a midline extraperitoneal approach. *Lancet* 230: 531, 1936.
3. Nyhus, L. M., Condon, R. E., and Harkins, H. N.: Clinical experiences with preperitoneal hernial repair for all types of hernia of the groin. *Am. J. Surg.* 100: 234, 1960.

A Report Of Two Cases Of Postpartum Heart Disease

ARTHUR L. ENNIS, M. D.

Birmingham, Alabama

Postpartum myocardial insufficiency of non-valvular origin has been estimated to occur in one of every 1300 to 4000 births. It has, however, been diagnosed only rarely, usually being confused when it occurs with the more common forms of heart disease.

In 1957, Meadows¹ reviewed the subject discussing 15 cases of his own, four of which were autopsied.

Since the above article, Gormsen and Ohlsen,² and Becker and Taube³ have reported three more cases with autopsy findings. The second case of Becker and Taube, while having the typical pathological picture seen in deaths occurring from postpartum myocardiosis, was doubtfully related to pregnancy, since the patient's last pregnancy had terminated spontaneously in the third month some

nine years prior to her death from congestive heart failure and embolic phenomena.

Walsh and Burch⁴ suggested more strict criteria for the diagnosis of postpartum heart disease in an effort to decide whether or not such a distinct disease entity exists.

Since May of 1960 two cases of myocardial insufficiency occurring in the postpartum period have been seen at Lloyd Noland Hospital. The reader is referred to the excellent paper by Meadows¹ where a thorough discussion of this syndrome may be found.

Case Reports

In case one, a 27 year old Negro female was delivered of a five pound live male on April 12, 1960. The delivery and immediate postpartum course were uncomplicated. She returned to the hospital on May 25, 1960, with the chief complaint of a fast heartbeat of one week's duration. She denied shortness of breath, orthopnea and pedal edema. The patient had experienced two previous deliveries which were uncomplicated.

Physical examination revealed a well-developed, well-nourished female who was alert

Dr. Ennis received his medical degree from the Medical College of Alabama and was formerly a resident in internal medicine at Lloyd Noland Hospital, Fairfield, Alabama. Presently he is a research fellow in metabolism and endocrinology at the University of Alabama Medical Center, Birmingham, Alabama.

and co-operative. She appeared to be in no distress. Her blood pressure was 110/76; the pulse was 164 and regular. The condition of the neck veins was not reported. Auscultation of the heart revealed a tachycardia and a grade one (using six possible grades) systolic ejection murmur. No gallop or thrill was noted and the heart did not appear to be enlarged. Milk could be expressed from both breasts. Examination of the lungs was negative. The abdomen was protuberant; the liver and spleen were not enlarged. There was no edema of the extremities. Neurological examination was within normal limits. An electrocardiogram showed a supraventricular tachycardia at a rate of 180 per minute. QRS interval was 0.09 seconds. The P-R interval could not be definitely determined. The mean QRS axis was normal.

Urinalysis on admission showed 4+ protein, 3+ pus cells and 25 hyaline and granular casts per low power field. The hemoglobin was 13.1 gms., the white blood count 6,600 with 77 per cent neutrophils, 20 per cent lymphocytes, and three per cent monocytes. Serum cholesterol was 182 mgm. per cent.

The patient had received 0.4 mgms. of Cedilanid® intravenously prior to admission and subsequently was given 0.5 mgms. of Digoxin® orally on admission to the ward. At 8:30 P. M. (eight hours after admission) the patient began to complain of shortness of breath and was noted to be perspiring profusely. Her blood pressure was 126/100 and her pulse was 128 per minute. The breath sounds were diminished at the base of the right lung laterally and posteriorly. Bilateral rales were present. A protodiastolic gallop was present. There was tenderness in the right upper quadrant but the liver was not felt to be enlarged.

Arm-to-tongue circulation time (Decholin®) was 17 seconds. On May 27, 1960, a chest X-ray revealed 17 per cent cardiac enlargement. Digitalization was continued with intravenous Cedilanid® and with oral Digoxin®. On the above regimen the patient improved.

Further laboratory studies were as follows: Urinalysis (May 28, 1960) trace of protein, specific gravity 1.020, "loaded" pus. On June 10, 1960, urinalysis showed no protein, a specific gravity of 1.012 and 3+ red cells. Erythrocyte sedimentation rate was 21 mm. in 45 minutes (May 31, 1960) and 19 mm. on June 21, 1960. C-reactive protein was 2+. Streptococcus A. S. O. titer (June 3, 1960) was 100 Todd units. On May 26, 1960, an electrocardiogram report was interpreted as follows: "Sinus tachycardia rate 125. Flat T1, T2, T3 and inverted T (V4, V5, V6). Abnormal due to T wave changes." This pattern persisted until July 1, 1960, when T waves were normal.

She was discharged from the hospital on July 1, 1960. She remained on Digoxin®, 0.5 mgms. daily and chlorothiazide or hydrochlorothiazide. The heart rate varied between 100 and 125 per minute. (The patient had inadvertently discontinued her digitalis and had to be redigitalized at the time the latter rate was noted). A diastolic gallop was intermittently present.

An electrocardiogram on July 19, 1960, was reported as abnormal due to T wave changes (Flat T V5, low T V6). A chest X-ray on August 4, 1960, was reported as normal.

The patient was last seen in the medical outpatient clinic on September 8, 1960. She was asymptomatic, although the pulse rate was 120 per minute. No gallop was noted.

The patient was readmitted to the Lloyd Noland Hospital on June 5, 1961 with the symptoms of congestive heart failure and died a few hours after arrival. She gave a history of having given birth to a child at home some four weeks prior to her admission. No autopsy was performed.

In case two, a 30-year-old Negro female was delivered of a live infant at another hospital three weeks prior to being admitted to Lloyd Noland Hospital. Her postpartum course was uneventful until one week prior to admission when she developed a sore throat, a cough productive of "white phlegm," and shortness of breath when lying flat. She had experienced fever during this period, but

denied chills or chilly sensations. Her shortness of breath had increased considerably in the 24 hours preceding admission.

The patient was first examined in the hospital emergency room on November 10, 1960. Her temperature was 99.8°. Expiratory rales were heard at the left base. There was no calf or thigh tenderness. She was treated with Aminophylline[®] only. The following day her condition began to deteriorate and she was admitted to the hospital for treatment.

Physical examination at this time revealed a well-developed, well-nourished female appearing ill and in severe respiratory distress. The blood pressure was 150/104 and the pulse rate was 145 per minute. The neck veins were not distended. No murmurs were heard. There were bilateral basilar inspiratory rales. The liver and spleen were of normal size. There was no edema. Arm-to-tongue circulation time (Decholin[®]) was 15 seconds. A chest film made on admission was reported as showing the heart to be 12.5 per cent enlarged and the presence of extensive, hazy, mottled infiltration in the perihilar and lower lung fields, more marked on the right, suggestive of pulmonary edema. An electrocardiogram on admission revealed a sinus tachycardia, rate 145, left axis deviation and inversion of the terminal portion of the T wave in V4, V5 and V6; SV2 + RV5 was 43 mm.

The urine contained a faint trace of protein; the specific gravity was 1.012; 1+ pus, and an occasional red blood cell was reported. Hemoglobin was 12.1 gms. White blood count was 8,600 with 77 per cent neutrophils, 20 per cent lymphocytes, two per cent monocytes and one per cent eosinophils. Blood urea nitrogen was 11 mgm. per cent. Erythrocyte sedimentation rate was 9 mm. in 45 minutes. Sputum was negative for pathogens.

She was digitalized with intravenous Ceditanid[®] and given morphine, intravenous Aminophylline[®], intramuscular Thiomerin[®], and Aminophylline[®] suppositories. She responded well to the above treatment and was continued on oral Digoxin[®]. On October 12, 1960, hydrochlorothiazide was added. Cul-

tures of her urine were positive for E coli and this was treated with Declomycin.[®]

The patient was discharged asymptomatic on October 24, 1960. She was maintained on 0.25 mgms. of Digoxin[®] daily. Her digitalis was discontinued on December 12, 1960.

The following studies were obtained on October 31, 1960: ASO titer 50 Todd units; C reactive protein negative. Viral studies were negative.

An electrocardiogram on November 14, 1960, was reported as abnormal due to T wave changes (low T1, V4-V6) and on December 12, 1960, it was normal. A chest film made on November 14, 1960, was reported as being within normal limits.

She was last seen in the medical clinic on February 6, 1961, with no abnormal findings and was asymptomatic.

The above cases exhibit the characteristic clinical features of postpartum myocardial insufficiency. Namely left ventricular failure occurring after delivery, gallop rhythm, a predominantly diastolic hypertension and T wave inversion in the electrocardiogram.

Summary

Two cases of postpartum myocardial disease are presented.

Whenever heart failure occurs in the postpartum patient, postpartum myocarditis should be considered in the differential diagnosis.

References

1. Meadows, W. R. Idiopathic myocardial failure in the last trimester of pregnancy and the puerperium. *Circulation* 15: 903, 1957.
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3. Becker, F. K., and Taube, H. Myocarditis of obscure etiology associated with pregnancy. *New Eng. J. Med.* 266: 62, 1962.
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Editorials

DRUG SAMPLES, USE AND ABUSE

The familiar sample has been a part of each physician's daily life since graduation. Drug samples serve a useful purpose. They can also perform a disservice, even a harmful one, if not properly controlled.

The problems created by the abundance of drug samples have called for official actions. Two statements follow: the first by the House of Delegates, American Medical Association, Fifteenth Clinical Meeting, November 26-30, 1961; the second by adoption by the Jefferson County (Alabama) Medical Society, September 11, 1961.

The A.M.A. Statement

The A. M. A. House of Delegates agreed with the Judicial Council that "the physician himself is responsible for the control and custody of *drug samples* once they come into his possession, and in the high tradition of the medical profession he should not dispose of them in any way that could cause harm to others."

The Jefferson County Society Statement:

Control

1. A physician's acceptance of drug samples imposes concomitant moral, ethical and legal responsibilities for their proper use and final disposition. Any drug samples offered, if the physician does not intend to so use them, should be declined.

2. The Durham-Humphrey Law provides that prescription legend drugs may be dispensed only on prescription of a licensed practitioner. Such drugs should be made available to patients only after the manufacturer's identification is removed and the name of the patient and directions for use are written on the container. Great care should be taken to prevent sample drugs from falling into the hands of children or uninformed non-medical personnel.

Proper Uses

1. Sample drugs may be used to test individual sensitivity in small amounts or in larger quantities to demonstrate clinical effectiveness in selected patients. A small starter supply may be given for use until the prescription is filled.

2. When medically indicated and supervised, sample drugs may be utilized by the physician, his family, or friends.

3. Unused drug samples may be provided for charity clinics and to reputable voluntary health organizations provided:

(a) The collecting group is under close supervision of a licensed physician or pharmacist. Supervision must be such that drugs remain correctly identified, have not passed the expiration date, and will not be diverted to unethical or unauthorized uses.

(b) Sample drugs must be kept under lock and made available only to clinics where they will be properly prescribed and distributed

under supervision of physician and/or pharmacist.

(c) No charge is to be made for these medications.

(d) Discontinued items, current samples, or stock packages can be utilized if the expiration date has not passed. These should not be publicized as "samples" which might mislead the public.

4. Drugs to be discarded should be destroyed or disposed of in such a manner that they will not fall into the hands of children or other unauthorized persons who might harm others or be harmed by them.

Abuses

1. To sell, or permit to be sold, or to be a party to having any drug samples pass into the hands of any individual or organization who sells them is a pernicious, unethical, and dishonest practice and shall be deemed grounds for action by medical society disciplinary bodies.

2. To purchase and use knowingly repackaged physician's drug samples is dangerous and encourages an illegal and unethical practice.

LETTERS TO THE EDITOR

Dear Dr. Smith:

I have just received my copy of the Journal of the Medical Association of the State of Alabama for January 1962. I am taking this moment out to compliment you on a well done job of publication, printing and illustration reproduction.

Sincerely,
Philip Thorek, M. D.

Dear Dr. Smith:

I wish to compliment you on publishing Mr. Francis H. Hare's article on malpractice in your January issue. I think it was wonderfully written and that reprints of it should be made available to legal and medical societies all over the United States.

Henri Rathle, M. D.

Dear Dr. Smith:

Our staff has read with interest and appreciation the following editorials that you have published:

"Drug Prices"—June, 1961

"Patent Rights"—August, 1961

If reprints or tear sheets are available, will you favor us with as many as you can spare and bill me accordingly? We receive your Journal on subscription but do not mutilate our copies as they are given to the library of one of the local medical schools.

Thank you.

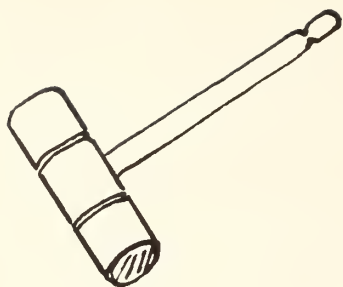
Sincerely,
Robert J. Banford, M. D.
Director of Medical Relations
Pharmaceutical Manufacturers
Association

Dear Dr. Smith:

I have just learned that the Journal of the Medical Association of the State of Alabama was judged the nation's fourth best state medical publication at the 1961 State Medical Journal Conference in Chicago in October.

I wish to take this opportunity to congratulate you and your staff on this outstanding achievement.

Sincerely yours,
L. Clark Gravlee, Jr., M. D.



President's Page



In the mid-thirties of this century there arose an idea that responses of our population could best be secured by dealing with them in groups—some local, some nationwide. In the political arena this form of combat has become more and more the pattern. Two or three generations of voters have now been trained in this approach. As physicians, I am sure that we would question the wisdom of this procedure. But unfortunately, people more intimately concerned in the political approach have devoted a great amount of time, practice, and effort in developing and spreading this idea. If we physicians are to hold our own in certain areas, we must give more thought to organizing our efforts along such lines. We must consult with our friends, and we must develop more activities among the groups who think as we do. Otherwise we are apt to lose more and more of the things that we regard as worth-while. We also must be aware that many “demands” of these groups are presented as “needs.” We must be very vigilant in exposing this subterfuge and in presenting the actual facts to our communities and to the voters.

Your attention is urgently called to the necessity for more intensive co-operation with our local public relations and legislative committees so that our lawmakers will be impressed with the fact that here is a powerful and active group to whom they must account. It is all very well to long for the

established doctor-patient relationship to be maintained, but we are actually dealing with an entirely different public organization from that of two or three generations ago. If we do not realize this fact and act in accordance with it, our position will continue to deteriorate.

In addition to local efforts in this regard, we must also be concerned with national efforts. Certain large groups are constantly endeavoring to increase their national voting power in order to secure these “demands.” You will soon begin to receive information about AMPAC, a voluntary association of members of the A. M. A. designed to combat more effectively this group tendency. You are asked to give serious consideration to this information. There is no compulsion, and funds secured will be entirely under local control; but it may offer a great opportunity to present the ideas of medicine on a national scope. We are in a precarious condition, and we should not let it get worse through lack of consolidated, honest effort to show our lawmakers what we think is best for our country and its citizens.

John W. Simpson, M. D.



ORGANIZATION SECTION

PROGRAM

Of The 101st Annual Session

Of The

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Birmingham

Municipal Auditorium

April 26, 27, 28, 1962

GENERAL INFORMATION

Headquarters for the convention will be Birmingham's air-conditioned Municipal Auditorium. Scientific and business sessions will be held on the second floor and exhibits will be displayed on the first floor.

Shuttle bus service to and from the Municipal Auditorium and the Vestavia Country Club will be available.

The maximum time consumed by essayists should not exceed *twenty minutes*. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the *Journal* of the Association.

All papers read before the Association should be deposited with the Secretary when read; otherwise, their publication may be delayed.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

REGISTRATION

The registration desk will be on the entrance floor of the Municipal Auditorium.

THE FIFTY YEAR CLUB

According to custom, physician members who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

HOST TO THE ASSOCIATION

The Jefferson County Medical Society.

OFFICERS

G. J. Roscoe, *President*
E. B. Robinson, Jr., *President-Elect*
Ben M. Carraway, *Vice-President*
Hal Ferguson, *Secretary-Treasurer*

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Stanley Graham, *Chairman*
James K. Ward, *Co-Chairman*

Finance

Paul W. Burleson, *Chairman*

Program

Hugh Linder, *Chairman*
Walter B. Frommeyer William A. Maddox

Golf

Jack B. Clayton, *Chairman*

Special Awards

S. Buford Word, *Chairman*

Woman's Activities

Mrs. S. Joseph Campbell, *Chairman*

Hospitality

John Slaughter, *Chairman*
Hughes Kennedy, Jr. Thomas Boulware
Gilbert Douglas, Sr. H. A. Harris
A. W. Davidson William N. Viar
LeRoy Holt Harold E. Simon
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D. G. Gill (1962) Montgomery

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Alternate—B. W. McNease Fayette
(Term: January 1, 1961-December 31, 1962)
Delegate—M. Vaun Adams Mobile
Alternate—Luther L. Hill Montgomery
(Term: January 1, 1962-December 31, 1963)

PROGRAM

First Day, Thursday, April 26

Municipal Auditorium

Morning Session

9:15 A. M.

Call to order by President—

Dr. John W. Simpson, Birmingham

Invocation—

*Dr. John Buchanan, Chaplain, Baptist Hospitals,
Birmingham, Alabama*

Address of Welcome—

Dr. Geoffrey Roscoe, President, Jefferson County Medical Society

PART I

REPORTS OF STANDING COMMITTEES

1. Public Relations—
L. L. Hill, Chairman
2. Medical Education and Hospitals—
W. L. Hawley, Chairman
3. Medical Care for Industrial Workers—
T. J. Payne, Jr., Chairman
4. Insurance—
J. O. Morgan, Chairman
5. Finance—
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6. Constitution and By-Laws—
J. W. Davis, Jr., Chairman
7. Indigent Care—
R. C. Berson, Chairman
8. Legislation—
W. E. White, Chairman
9. Rural Health—
Paul Nickerson, Chairman
10. Disaster—
T. S. Boozer, Chairman
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12. Maternal and Child Health—
T. B. Woods, Jr., Chairman
13. Aging—
J. J. Kirschenfeld, Chairman
14. Cancer Control—
T. B. Hubbard, Jr., Chairman
15. Mental Hygiene—
C. D. Meyers, Chairman
16. Tuberculosis and Chronic Pulmonary Diseases—
A. A. Calix, Chairman

17. Space Medicine—
W. F. Reynolds, Chairman

18. Grievance—
J. O. Morgan, Chairman

SPECIAL COMMITTEES

1. American Medical Education Foundation—
D. E. Owensby, Chairman
2. Blue Cross-Blue Shield—
H. G. Hodo, Jr., Chairman
3. A. M. A. Program Evaluation—
E. M. Moore, Chairman
4. Relative Value Schedule—
H. H. Hutchinson, Chairman

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E. L. Strandell, Brewton

(2) Northeastern Division
W. E. White, Anniston

(3) Southeastern Division
J. E. Brantley, Troy

(4) Northwestern Division
H. G. Hodo, Jr., Fayette

The President's Message—
John W. Simpson, Birmingham

PART II

SCIENTIFIC PROGRAM

1. *Importance of Malignancies in Childhood—*
MARSHALL PITTS,
Department of Pediatric Surgery
Children's Hospital
Birmingham, Alabama
2. *Toxic Reactions to Local Anesthetics—*
JOHN STEINHAUSE,
Professor of Anesthesiology
Emory University School of Medicine
Atlanta, Georgia
3. *Blue Cross in Relation to Medical Care—*
WALTER I. McNERNEY, Ph.D.,
President,
Blue Cross Association,
Chicago, Illinois
4. RECOGNITION OF ESSAY CONTEST WINNER

ORGANIZATION SECTION

Afternoon Session

Thursday, April 26

2:00 P. M.

1. *Nutritional Macrocytic Anemia*—
WILLIAM B. CASTLE,
Director,
Thorndike Memorial Laboratory
Harvard University
Boston, Massachusetts
2. *Welcome*—
HONORABLE ARTHUR HANES,
Mayor
Birmingham, Alabama
Presentation of Key to City
3. *Address*—
DR. LEONARD W. LARSON,
President
American Medical Association
Address is also a portion of the Orientation
Program
4. RECOGNITION OF FRATERNAL DELEGATES
5. *Certain Extremity Abnormalities and their
Management*—
Color movie with sound
CHESTLEY YELTON,
Department of Orthopedics
Lloyd Noland Hospital
Fairfield, Alabama

Second Day, Friday, April 27

Morning Session

9:15 A. M.

1. *The Doctor and His Allies*—
MR. WARREN WHITNEY,
Vice President, J. B. Clow & Sons, Inc.
Birmingham, Alabama
2. *Non-Cardiac Conditions which May Stimulate
Cardiac Pain. Diagnosis and treatment. Dem-
onstration, closed circuit color television*—
DR. TINSLEY HARRISON AND STAFF,
Department of Medicine
Medical College of Alabama
3. RECOGNITION OF THE FIFTY YEAR CLUB
4. THE JEROME COCHRAN LECTURE:
A Study in the Emotions of Childhood—
A. ASHLEY WEECH,
Department of Pediatrics
University of Cincinnati Medical College
Cincinnati, Ohio.
5. Announcement of vacancies in College of Coun-
sellors.

6. Meeting of Counsellors and Delegates for the
purpose of making nominations to fill vacancies
in the College of Counsellors.

Afternoon Session

Friday, April 27

2:00 P. M.

1. *Internal Derangement of the Knee Joint*—
JOHN D. SHERRILL, SR.,
Section of Orthopedics
Medical College of Alabama
Birmingham, Alabama
2. *Present Day Rehabilitation*—
WILLIAM H. SPENCER,
Director,
Institute for Rehabilitation and Research
Texas Medical Center
Houston, Texas
3. *The Current Role of Insulin in the Era of Hypo-
glycemic Agents*—
EDGAR A. HAUNZ,
Department of Internal Medicine
Grand Forks Clinic,
Grand Forks, North Dakota
4. *Mammography*—
ROBERT L. EGAN,
Department of Radiology
Texas Medical Center
Houston, Texas
5. *Revelant Facts of Space Medicine*—
CAPTAIN ASHTON GRAYBIEL
Pensacola, Florida

Last Day, Saturday, April 28

Municipal Auditorium

9:00 A. M.

Business Meeting of the Association sitting as
the Board of Health of the State of Alabama:

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls:
 - (a) County Societies,
 - (b) Counsellors,
 - (c) Correspondents;
- (3) Election and Installation of Officers.

Adjournment

ORGANIZATION SECTION

OTHER ITEMS

ORIENTATION PROGRAM

EAST MEETING ROOM, MUNICIPAL AUDITORIUM
THURSDAY, APRIL 26, 1962

- 9:45 A. M.—Registration
- 10:00 A. M.—Call to Order: M. Vaun Adams, President-Elect, M. A. S. A., Presiding
- 10:10 A. M.—The Board of Censors—Their Duties and Responsibilities—John Paul Jones, Chairman, Board of Censors
- 10:15 A. M.—The State Health Officer—His Duties and Responsibilities—D. G. Gill, State Health Officer
- 10:40 A. M.—Medical Ethics and Medical Etiquette—Edgar G. Givhan, Jr., A Past-President of M. A. S. A.
- 10:55 A. M.—Alabama Medical Organization—Douglas L. Cannon, Former Secretary, M. A. S. A.
- 11:10 A. M.—Services Rendered by State and County Health Departments, Laboratories—Clinics—Immunizations—Ira L. Myers, Administrative Officer to State Health Officer
- 11:25 A. M.—Intermission
- 11:30 A. M.—Tuberculosis, Cancer, Mental Health and Venereal Disease Programs of the State—W. H. Y. Smith, Director, Bureau of Preventable Diseases, State Department of Public Health
- 11:45 A. M.—Where Do the Annual Dues to the State Association Go?—W. A. Dozier, Jr., Executive Secretary, M. A. S. A.
- 12:00 Noon—Blue Cross-Blue Shield—How It Helps—How to Kill It—William H. Mandy, Physicians Relations Manager, Blue Cross-Blue Shield of Alabama
- 12:15 P. M.—The Medical Auxiliary Representation—Mrs. W. A. Cunningham, President, Woman's Auxiliary to M. A. S. A.
- 12:20 P. M.—LUNCH
- 1:00 P. M.—Question and Answer Period
- 1:20 P. M.—Medical Malpractice—How to Prevent Suits to Yourself and Others—Malpractice Insurance—C. B. Marshall, Claims Manager, Liberty Mutual Insurance Company
- 1:35 P. M.—The Doctor and Law Enforcement: Responsibility to Report Violations of the Law; Functions of the State Toxicologist; Functions of the County Coroner; Functions of the Circuit Solicitor—Emmett Perry, Circuit Solicitor, 10th Judicial Circuit, Birmingham
- 1:50 P. M.—Narcotics Pitfalls—E. R. Barber, Narcotic Agent, United States Bureau of Narcotics, Birmingham
- 2:05 P. M.—An Investment Program for Doctors—Lewis J. Frampton, Trust Investment Officer, Birmingham Trust National Bank
- 2:25 P. M.—Question and Answer Period

2:50 P. M.—Adjournment to hear Dr. Leonard W. Larson, President, American Medical Association.

THE FIFTY YEAR CLUB

Class of 1962

(To whom Certificates of Distinction will be awarded on Friday morning immediately before the Jerome Cochran Lecture.)

Allgood, Homer W., Sr.	Fairfield
Bird, Buford C.	Montgomery
Brownlee, Leslie G.	Shaker Hgts., Ohio
Chapman, Jesse P.	Selma
Cooley, Beamon S., Sr.	Birmingham
Dabney, Marye Y.	Birmingham
Granger, Frank G.	Ashford
Grote, Carl A.	Huntsville
Hardy, Walter B.	Birmingham
Isbell, Arthur L.	Albertville
Laughlin, James B.	Huntsville
Lawrence, Toombs	Tuscaloosa
Lewis, Thomas K.	Birmingham
McCulloch, Hugh	Montgomery
McDaniel, Joe C.	Birmingham
McQuiddy, Robert C.	Birmingham
Meadows, James A.	Birmingham
Partlow, Rufus C.	Tuscaloosa
Reid, James	Clayton
Smith, Rayford A.	Monroeville
Stallworth, Clark J.	Thomaston
Underwood, Floyd R.	Red Bay

VACANCIES IN COLLEGE OF COUNSELLORS

1st Congressional District—3. Grady O. Segrest has been elevated to Life Counsellor. Ralph D. Neal has completed his second term of seven years. J. E. Moss has completed his first term of seven years.

2nd Congressional District—2. Claude G. Godard has been elevated to Life Counsellor. Robert Parker has completed his second term of seven years.

5th Congressional District—1. N. A. Wheeler, Jr. has completed his first term of seven years.

7th Congressional District—2. M. S. Whiteside has been elevated to Life Counsellor. W. T. Snoddy has completed his first term of seven years.

8th Congressional District—4. J. S. Crutcher, Jr. has resigned. W. G. McCown is deceased. M. E. Barrett and M. H. Lynch have completed their first term of seven years.

9th Congressional District—7. H. Earle Conwell, John W. Simpson, and Frank C. Wilson have been elevated to Life Counsellor. W. S. Littlejohn, and E. B. Robinson, Jr. have completed their second term of seven years. E. B. Glenn has completed his first term of seven years. Under reapportionment of Counsellors by the State Board of Censors, the district is allotted a counsellorship to which it is entitled.

ORGANIZATION SECTION

SCIENTIFIC EXHIBITS

Anyone who desires space for a scientific exhibit for the Annual Session of The Medical Association of The State of Alabama, Birmingham, April 26-28, 1962, is invited to write Dr. Champ Lyons, 1919—7th Avenue South, Birmingham, for information.

OTHER EVENTS

APRIL 25, 1962

Alabama Chapter

American Society of Anesthesiologists

Dr. John E. Steinhaus, professor of anesthesiology, Emory University School of Medicine, will speak on "Is Depth of Anesthesiology an Outmoded Concept" at a dinner meeting at the Guest House Motel at 6:30 P. M.

Alabama Chapter

American College of Chest Physicians

The ninth annual meeting will be held at the Tutwiler Hotel, with registration beginning at 1:30 P. M.

Alabama Dermatology Society

A clinical meeting will be held at 7:30 P. M. in the Jefferson Hillman Clinic. Presentation of cases will be given from 7:30 to 8:30 P. M. with a discussion period following.

Alabama Academy of General Practice

A dinner meeting of the Board of Directors will be held at 6:00 P. M. at the Tutwiler Hotel.

Alabama Academy of Neurology and Psychiatry

A dinner meeting will be held at King's Inn, St. Francis Motel, Homewood, at 6:00 P. M.

Alabama Academy of Ophthalmology and Otolaryngology

A clinical and scientific program will be presented at the Medical Center Wednesday afternoon from 2:30 to 5:00 P. M., with a dinner meeting scheduled for 6:30 P. M. at "The Club".

Alabama Orthopaedic Society

The Alabama Orthopaedic Society will hold a scientific meeting at the Guest House Motel Wednesday morning at 10:00 A. M. Speakers include Dr. David G. Vesely, who will lecture on "Difficult Non-union of Long Bones and Use of the Split Nail"; Dr. John F. Comer, will speak on "Hemivertebrae" and present a case study; Dr.

Benjamin Meyer, will discuss "Arthrodesis of the Hip"; Dr. C. L. Yelton will conduct a symposium on amputations. Lunch will be served and a business meeting will be held in the afternoon.

APRIL 27, 1962

Alabama Chapter

International College of Surgeons

There will be a breakfast and business meeting at 7:30 A. M. at the Tutwiler Hotel.

Alabama Radiological Society

Dr. Robert L. Egan will be the guest speaker at a luncheon meeting at "The Club" at 12:00 noon.

APRIL 28, 1962

Alabama Society of Internal Medicine

Dr. Walter I. McNerney, president of Blue Cross Association, will speak at a meeting of the Alabama Society of Internal Medicine Saturday afternoon in the Municipal Auditorium.

SOCIAL EVENTS

Wednesday, April 25

Physician's Golf Tournament

Physicians are invited to compete for the second annual James Roscoe Shamblyn Memorial Golf Trophy on Birmingham Country Club's famous West Course.

Thursday, April 26

Members of the Association and their guests are invited to an Open House and social hour at Children's Hospital beginning at 5:00 P. M., and to a Barbecue at Norwood Clinic at 6:00 P. M.

Reunion of Lloyd Noland Hospital Alumni, Birmingham Country Club, 6:00 P. M.

Friday, April 27

Members of the Association and their guests will be entertained at a reception at Vestavia Country Club, courtesy of the Liberty National Life Insurance Company, 6:30 P. M. Buffet supper at 7:30 P. M.

Presentation of William Crawford Gorgas Award.

Presentation of Douglas L. Cannon Medical Reporter Award.

Presentation of the James Roscoe Shamblyn Memorial Golf Trophy.

Presidential Ball, 9:30 P. M., Vestavia Country Club.

PROGRAM Of The WOMAN'S AUXILIARY To The MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

TUTWILER HOTEL

APRIL 26-27, 1962

OFFICERS

President

Mrs. William A. Cunningham Birmingham

President-Elect

Mrs. John M. Kimmey Elba

Vice-Presidents

Northeast—Mrs. W. R. Sutton Blountsville

Northwest—Mrs. William D. Anderson Tuscaloosa

Southeast—Mrs. John W. Webb, Jr. Montgomery

Southwest—Mrs. Curtis A. Smith Mobile

Recording Secretary

Mrs. Robert Cale Bessemer

Corresponding Secretary

Mrs. H. Price Edwards Birmingham

Treasurer

Mrs. James F. Crenshaw Birmingham

Finance Officer

Mrs. Oscar Dahlene, Jr. Birmingham

Historian

Mrs. Sim Penton Montgomery

Parliamentarian

Mrs. John M. Chennault Decatur

Directors

Mrs. John T. Morris Cullman

Mrs. George W. Newburn, Jr. Mobile

Mrs. W. M. Salter Anniston

COMMITTEE CHAIRMEN

A. *Sponsored by Woman's Auxiliary, American Medical Association:*

American Medical Education Foundation—
Mrs. Seaburt Goodman, Birmingham; Mrs.
James M. Morgan, Jr., Co-Chairman, Bir-
mingham

Bulletin—Mrs. John F. Holley, Florala

Civil Defense—Mrs. William Noble, Fort Payne
Community Service—Mrs. Harmon Stokes,
Dothan

Health Careers—Mrs. James Guin, Jr., Tusca-
loosa

Legislation—Mrs. Winston A. Edwards, We-
tumpka; Mrs. Robert Guthrie, Birmingham

Mental Health—Mrs. T. K. Lewis, Decatur

Membership—Mrs. John M. Kimmey, Elba

Members-at-Large—Mrs. James Cameron,
Alexander City

Program—Mrs. Ira Patton, Oneonta

Rural Health—Mrs. J. P. Brooke, Bessemer

Safety—Mrs. James Gaba, Winfield

W. A. S. A. M. A. Auxiliary—Mrs. R. A. Dil-
lard, Birmingham

ORGANIZATION SECTION

- B. *Sponsored by Woman's Auxiliary, Southern Medical Association:*
 Woman's Auxiliary to S. M. A. Projects—Mrs. Brison Robertson, Jr., Councilor, Birmingham
- C. *Sponsored by Woman's Auxiliary, Medical Association of the State of Alabama:*
 Archives and Exhibits—Mrs. Lowell H. Clemmons, Cullman
 Essay Contest—Mrs. William J. Rosser, Birmingham
 Memorial—Mrs. Chester Beck, Troy
 Nominating—Mrs. John T. Morris, Cullman
 Press and Publicity—Mrs. Kellie Joseph, Birmingham; Mrs. Wm. D. Romine, Co-Chairman, Birmingham
 Revisions—Mrs. Julian P. Howell, Selma
 WAMASA NEWS—Mrs. Wilmot Littlejohn, Birmingham, Chairman; Mrs. Robert L. Tourney, Birmingham, Co-Chairman
 WAMASA NEWS Circulation—Mrs. Harry E. Caldwell, Birmingham
 Yearbook—Mrs. Don E. King, Birmingham
- D. *Convention*—General Chairman: Mrs. Joe Campbell, Birmingham; Co-Chairman: Mrs. Chestley Yelton, Birmingham
 Advisory Council—Josiah C. Carmichael, M. D., Birmingham; John M. Chennault, M. D., Decatur; Lowell H. Clemmons, M. D., Cullman; Wilmot S. Littlejohn, M. D., Birmingham; Chestley L. Yelton, M. D., Birmingham

PROGRAM

Wednesday, April 25

- 1:00-5:00 P. M.—Pre-Convention Registration, Lobby, Tutwiler Hotel
- 1:30-4:00 P. M.—Pre-Convention Board Meeting, Colonial Room, Tutwiler Hotel, Mrs. William A. Cunningham, President, presiding

Thursday, April 26

- 8:30-3:00 P. M.—Registration, Lobby, Tutwiler Hotel
- 8:30-9:30 A. M.—Dutch Breakfast—Tutwiler Hotel. Hostess: Jefferson County Auxiliary, Bessemer; Mrs. D. R. Blue, Chairman
- 10:30-12 Noon—First General Session—Tutwiler Hotel
 Call to order—Mrs. William A. Cunningham
 Invocation—Mrs. James Gordon Daves, Cullman
Membership Pledge: I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals.

- Welcome—Mrs. Milton C. Ragsdale, Birmingham
 Response—Mrs. John Miller, III, Cordova
 Introduction of guests—Mrs. William A. Cunningham
 Convention Rules of order—Mrs. Joe Campbell, Birmingham
 First Report of Credentials Committee—Mrs. Robert W. Grady, Birmingham
 Report of Reading Committee—Mrs. R. T. Cale, Bessemer
 Annual Report of Officers
 Annual Report of County Presidents—Mrs. John Kimmey, Elba
Northeastern District—Mrs. W. R. Sutton, Blountsville
 Blount—Mrs. W. R. Sutton, Blountsville
 Calhoun—Mrs. A. N. Taylor, Anniston
 DeKalb—Mrs. G. I. Weatherly, Fort Payne
 Etowah—Mrs. Orville Morgan, Gadsden
 Jackson—Mrs. I. W. Bankston, Scottsboro
 Madison—Mrs. H. M. Pewitt, Huntsville
 Marshall—Mrs. J. K. Clemons, Albertville
 Talladega—Mrs. L. D. Graves, Talladega
Southeastern District—Mrs. John Webb, Jr., Montgomery
 Coffee—Mrs. Donald Crook, Elba
 Covington—Mrs. W. G. Cumbie, Andalusia
 Elmore—Mrs. C. S. Cotlin, Wetumpka
 Geneva—Mrs. John Miller, Geneva
 Houston—Mrs. Robert Wise, Dothan
 Montgomery—Mrs. J. Pickering, Montgomery
 Pike—Mrs. Jesse Colley, Troy

- Memorial Service—Mrs. Chester K. Beck, Troy
- 12:30 P. M.—Dutch Luncheon (dejeuner a la fourchette), Tutwiler Hotel, honoring Mrs. Roy Douglas, President, Woman's Auxiliary to the Southern Medical Association, and Mrs. William G. Thuss, Sr., President-Elect of the Woman's Auxiliary to the American Medical Association; Mrs. William A. Cunningham, presiding
 Invocation—Mrs. Arthur Freeman
 Greetings from Dr. Leonard W. Larson, President, American Medical Association
 Greetings from Dr. John T. Simpson, President, Medical Association of the State of Alabama

Friday, April 27

- 8:30-12 Noon—Registration—Lobby, Tutwiler Hotel
- 9:00-10:00 A. M.—Dutch Breakfast—Tutwiler Hotel. Hostess: Jefferson-Bessemer; Mrs. D. R. Blue, Chairman
- 10:30 A. M.—Second General Session—Tutwiler Hotel
 Call to order—Mrs. Wm. A. Cunningham
 Invocation—Mrs. Lonnie W. Funderburg, Birmingham
 Introduction of guests—Mrs. W. A. Cunningham

ORGANIZATION SECTION

Recommendations from Executive Board—
Mrs. Robert Cale, Bessemer

Presentation of Budget for 1962-63—

Mrs. Oscar Dahlene, Jr., Birmingham

New Business:

Report of Nominating Committee—Mrs. John T. Morris, Cullman

Election of Nominating Committee

Election of Delegates to National Convention

Second Report of Credentials Committee—Mrs. Robert W. Grady, Birmingham

Annual Report of County Presidents (continued)—
Mrs. John Kimmey, Elba

Northwestern District—Mrs. W. D. Anderson, Tuscaloosa

Colbert—Mrs. Gene Qualls, Sheffield

Cullman—Mrs. J. C. Chambliss, Cullman

Jefferson-Bessemer—Mrs. D. R. Blue, Bessemer

Jefferson-Birmingham—Mrs. Paul Salter, Birmingham

Lauderdale—Mrs. Wm. Bradley, Florence

Marion—Mrs. E. A. West, Hackleburg

Morgan—Mrs. Claude Lavender, Decatur

Pickens—Mrs. W. W. Duncan, Aliceville

Tuscaloosa—Mrs. James McLester, Tuscaloosa

Walker—Mrs. G. H. Weaver, Cordova

Southwestern District—Mrs. Curtis A. Smith, Mobile

Baldwin—Mrs. Norman Van Wezel, Foley

Clarke—Mrs. Palmer H. Warren, Jackson

Conecuh-Monroe—Mrs. Cecil Price, Evergreen

Dallas—Mrs. Sam O. Moseley, Jr., Selma

Escambia—Mrs. Bancroft Cooper, Atmore

Mobile—Mrs. Jack O. Yeager, Mobile

Installation of Officers—Mrs. Harlan English, President, Woman's Auxiliary to the American Medical Association, Danville, Illinois

Presentation of President's Pin and Gavel—Mrs. William A. Cunningham

Presentation of Past President's Pin—Mrs. John Chennault

Inaugural Address—Mrs. John M. Kimmey, Elba

Final Report of Credential Chairman—Mrs. Robert W. Grady, Birmingham

Introduction of Committee Chairmen for 1962-1963

Invitation to Luncheon—Mrs. Joe Campbell, Birmingham

1:00 P. M.—Luncheon at "The Club" atop Red Mountain, honoring Mrs. Harlan English, President, Woman's Auxiliary to the American Medical Association

Mrs. Paul Salter, presiding

Host: Jefferson County Medical Auxiliary

Invocation—Mrs. Robert Guthrie, Birmingham

Introduction of guests and new officers

Awards—

A. M. E. F.—Mrs. Seaburt Goodman, Birmingham

Archives & Exhibits—Mrs. Lowell H. Clemmons, Cullman

Address—Mrs. Harlan English

Fashion Show

Adjournment

CONVENTION RULES OF ORDER

1. There will be a registration fee of \$3.00 to include the Friday luncheon at "The Club."

2. All persons appearing on program shall be seated in a reserved section at front of room.

3. Members of the voting body shall wear badges at all sessions of the convention.

4. When addressing the chair, the member shall rise, give name and the name of county Auxiliary.

5. Unless notified to the contrary, each speaker shall be limited to two minutes and shall not speak more than twice on any question.

6. A timekeeper will notify each speaker when two minutes are up.

7. All motions shall be written, signed and presented to the Recording Secretary.

8. Reports shall be read only by the person making the report or her appointed delegate.

9. Visitors are welcome to all sessions of the convention but are requested to register and to sit apart from the voting body.

JEFFERSON COUNTY COMMITTEES FOR CONVENTION

General Convention Chairman—Mrs. Joe Campbell; Co-Chairman, Mrs. Chestley Yelton

Breakfast—Jefferson-Bessemer—Mrs. D. R. Blue

Publicity—Mrs. Kellie Joseph

Registration and Credentials—Mrs. Robert Grady

Finance—Mrs. Oscar Dahlene, Jr.

Hospitality—Mrs. Brad Morris

Transportation—Mrs. Paul Reque

Thursday Luncheon—Mrs. Len Burroughs, Chairman; Mrs. William Warrick, Mrs. John Kent, Mrs. Frank Trucks

Friday Luncheon—Mrs. Charles Kessler, Chairman; Mrs. Claude Blackwell, Mrs. Bankston Riser, Mrs. John Elmore, Mrs. Herbert Thomas

Fashion Show Chairman—Mrs. Paul Woodall



ASSOCIATION FORUM

Medicine's seven deadly sins

The author, who died in 1956, once headed California's Blue Shield and the California Academy of General Practice.

His forthright criticism of his profession, which was first published posthumously in 1957, is still apt today.

By Francis T. Hodges, M.D.

It's customary in a critical article like this to use an escape clause, assuring the thousands of honest, conscientious physicians that *they*, of course, are not being attacked—that it's only the culprits on the fringe who are being rooted out and exposed.

This is not my intent. I direct my accusations at my profession. It's time we altered our thinking and some of our practices.

Mr. Average Citizen isn't actively angry about ghost surgery, fee splitting, or unnecessary surgery to the degree you might think. (His indignation at these practices rises only as members of the profession call his attention to them.) But he's in a slow burn as a result of commissions and omissions by thousands of us who would never consciously commit the above offenses.

If we, as a profession, indulged more in critical self-analysis and less in injured pride, we might be more aware of our errors. Taking my cue from theology, I'd like to discuss those errors as medicine's "seven deadly sins."

The first and probably least excusable sin is *arrogance*. An attorney-friend—a good friend of medicine incidentally—has stated this to be the greatest single cause of public resentment. And I agree; too many M. D.'s are arrogant. Undue pride in public servants is unbecoming, and our public has an obliging penchant for providing the fall that pride goeth before. If the people observe that we like to strut, may they not conclude that we could be made to goose-step?

I have heard arrogant men make it clear that no one is going to tell *them* what to do.

Let's not forget that we're franchised by the public and that only as long as we serve it will our franchise continue.

Condescension, aloofness, and a sense of our own infallibility don't win us friends in court. I heard a patient fresh from a visit to a great teaching hospital remark that he had received friendlier glances from the cod at the Boston Fish Pier than he had won from some of the Great Men at that hospital. Why, he asked, should a reasonably intelligent patient who inquires about the diagnosis of his case, the prognosis, and the plan of treatment get no more than a curt answer, phrased in double-talk? Why should an anxious family be made to feel it should have gone to the servant's entrance when asking legitimate questions at the hospital?

Let's descend from our pedestal. We may regain some of our perspective if we start viewing people from a common level.

Indifference, our second deadly sin, probably arises from the first one. To the extent that we appear to set ourselves above the general public, we appear to dissociate ourselves from the public's welfare. It's not enough, in these times of national striving for a means of medical prepayment, to point magnanimously to our charity clinics as the answer to the family needing medical care. The public has pride too.

The indifference of so many doctors shows up in their lack of support for our medical schools. It shows up in their giving little better than lip service to their Blue Shield plans. It shows up when they choose to interpret our code of ethics as implying that they must remain aloof from community and civic affairs and responsibilities. Such indifference deters the doctor from acting for patients as if he himself were a patient. And that's bad, because most people are readier to forgive medical bungling than to forgive indifference.

Idolatry: Many of us have taken to worshipping the golden calf of science. We're convinced that medical practice is nothing but science, and that when all the rituals of scientific protocol have been observed, the

patient has been treated fully and well.

The high priests of this cult are impatient with the belief that warm personal relations must be the prelude to any treatment of our patients. If they could only see that the patient has become their living sacrifice!

Greed, now symbolized by a white Cadillac, is one of our gravest sins. And it calls attention to all our other sins. Too many of our numbers are willing to charge such high fees that the entire economy of a family may be ruined. How would you like to be in the position of being asked, "How much is your mother's life worth to you?" I have had patients return from consultants with just such reports.

It's greed that makes some doctors evasive when a patient wants to know in advance what his care will cost him.

It's greed that makes some doctors demand that cash be on hand before they'll make a night call.

It's greed that prompts some doctors to insist on full surgical payment in advance.

The public recognizes prosperity as a just reward for industry and service. Loud opulence, it does not. People expect success of their doctor; they distrust shabbiness. But they're bitter when convinced that material gain, rather than service, is his prime motivation.

Stupidity, while not the most evil of our sins, is the most shameful. Greed may imply shrewdness. But stupidity in a learned profession simply isn't in character. Yet we'll spend millions of dollars on a packaged public relations program whose only effect is to lull us with our own releases—while it sends the nation's press into happy paroxysms of ridicule.

Medicine's most familiar public pose in recent years has been foot-in-mouth. And who furnishes the material for all the inflammatory articles about medicine in the popular press? Our stupid colleagues.

Stupidly, we get maneuvered into corner after corner. We are constantly making stra-

tegic retreats. We take the lead too seldom, spend all our time on the defensive. How many of my patients and friends have asked me, "Isn't medicine ever for anything?"

Fratricide: One would suppose that a profession dedicated to working together in harmony for the public good wouldn't be given to attempts by one colleague to destroy another, or by one group to eliminate another. But this is what we see happening again and again. Indeed, sometimes there seems to be far more tolerance of the cults by the profession than there is tolerance by one medical faction of another that it thinks has stepped on its nice green grass!

The damage that is done to the medical profession as a whole when one of its members publicly accuses another of fraud, incompetence, sharp dealing, or other chicanery is beyond estimate. People are impelled to ask whether disease or one's competitor is the enemy.

The sword being wielded for the extermination of a brother may prove to be two-edged. Its wild, uncontrolled swings can return to disembowel the wielder. Thus, it may precipitate the terminal event of medicine as we now know it: the final deadly sin of *suicide*.

It is far easier, of course, to point out what is wrong than to emerge with a program for correcting it. Even so, recognizing our sins is a step in the right direction. So here are further suggestions:

As to *arrogance*, I wince with other physicians at the familiar "Doc." But doesn't that title convey as much affection as it does familiarity? What's wrong with being close to our patients? The warm, friendly, and human physician has a true advantage in treating the sick.

If we correct arrogance by permitting our patients to reach us as men, we can dispel the impression of *indifference* by going to our patients and meeting them as people and getting to know them.

We can also be community-minded and known by name in areas other than merely

that of our practices. We can render active support to medical schools. We can help devise prepayment plans of the type the people seek—not just offer them what is suited to our own interests. And if we are to win worshipers from the idolatrous god of pure science, we must pay some sort of obeisance to art. We must recognize that more exists than can be proved by formulas.

Greed can be defeated before it begins. If we recognized that few callings provide more comfortable living than ours, we could be relieved of the panicked grasping for security. The public doesn't begrudge us that security. It simply resents our trying to get it all at once. We must think of a fair fee for a fair service, rather than all the traffic will bear.

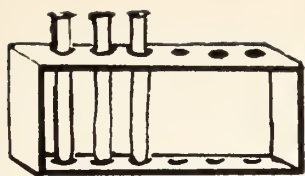
We can cure *stupidity* if we will grant that our public is not stupid. In fact, it wouldn't hurt us to try assuming that our patients are as intelligent as we.

Remember Hollywood's assumption, in producing films, that the average intelligence of the American public was that of a 10-year-old? Then recall the inroads made on our movie industry by foreign pictures of mature appeal.

Fratricide can be ended when we think of ourselves as members of the same family, not as splinter groups. It can be ended when our differences are settled within our own house. It can be ended when we begin to take greater pride in the title "Doctor" than in the division of medicine that occupies our main interest. It can be ended when no division of medicine employs hirelings whose duties include attacking other divisions, particularly in the public press.

Our apparently willful attempts at *suicide* will come to an end with a serious examination of our errors—and with a serious determination to do something about them. Only thus can we regain our favored place in the public's affection and preserve the type of medical practice that's best for all.

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STATE DEPARTMENT OF HEALTH

THE U. S. PUBLIC HEALTH SERVICE AND RADIOLOGICAL HEALTH

In recent months there has been greatly increased publicity about the dangers to man from radiation. This publicity has been a result, of course, of Russia's testing of nuclear weapons and the possibility that this country may resume atmospheric testing. The State Health Department does not have funds to conduct a comprehensive control and/or research program in radiological health, although there is a limited amount of work in this area carried on by the Bureau of Dental Hygiene and the Water Improvement Commission. Major activity has thus far been carried on by the Division of Radiological Health, U. S. Public Health Service. This program is briefly described here.

The goals of the program are:

1. To develop and evaluate the legal and administrative bases about which a national radiological health program should be formulated and conducted.

2. To develop and operate a comprehensive program of radiological health within the Public Health Service in collaboration with other related programs of the Department of Health, Education, and Welfare.

3. To strengthen gradually the role of the states and local communities in the field of radiological health.

4. To develop public understanding and professional competence in the area of radiation protection and health effects.

5. To develop a nation-wide system of environmental radiation surveillance.

6. To conduct a nation-wide evaluation of the long-term effects of radiation.

7. To bring about the evolution of standards for health protection.

8. To develop a basis for assessing the sociological benefits accruing to applications of radiation in relation to resulting health standards.

To achieve these goals, the Division of Radiological Health carries on the following activities:

1. Conducts and develops research projects leading to the assessment of radiation exposure of the U. S. population and its effects on the public health. A scientific basis for planning appropriate measures to assure protection of the population from harmful radiation exposure is the primary purpose of this research.

2. Trains professional personnel to meet national, state, and local needs. This training is achieved through providing financial support to universities; conducting intensive one and two-week training courses for state and local health department officials and professional personnel from federal agencies, industry, colleges, and foreign countries; preparation and distribution of technical training aids; and the provision of advanced scientific training for physicists, engineers, physicians, dentists, and other professional personnel of the Public Health Service.

3. Joins other agencies of the federal government in special projects dealing with health aspects of radiation exposure.

4. Assists states and local health agencies in their development and operation of programs in radiological health. Such assistance may include grants to support health services, assignments of technical personnel on a full-time basis, consultation, technical assistance in surveys of existing medical and dental X-ray units, and laboratory services.

5. Operates surveillance networks to determine current levels of radiation in our environment—air, water, milk, and food.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1961

*E. E.

	Nov.	Dec.	Dec.
Tuberculosis	98	119	136
Syphilis	111	109	104
Gonorrhea	263	324	244
Chancroid	3	0	5
Typhoid fever	0	2	2
Undulant fever	0	2	0
Amebic dysentery	4	5	1
Scarlet fever and strep. throat	79	80	79
Diphtheria	3	5	15
Whooping cough	0	2	24
Meningitis	10	5	12
Tularemia	0	0	0
Tetanus	0	0	3
Poliomyelitis	2	1	6
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	59	133	78
Chickenpox	4	37	117
Mumps	27	19	84
Infectious hepatitis	84	142	24
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	433	606	402
Pellagra	0	1	0
Rheumatic fever	17	13	10
Rheumatic heart	28	31	20
Influenza	64	111	252
Pneumonia	156	205	233
Rabies—Human cases	0	0	0
Pos. animal heads	0	2	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director
SPECIMENS EXAMINED

December 1961

Examinations for malaria	2
Examinations for diphtheria bacilli and Vincent's	28
Agglutination tests	339
Typhoid cultures (blood, feces, urine and other)	318
Brucella cultures	3
Examinations for intestinal parasites	1,975
Darkfield examinations	1
Serologic tests for syphilis (blood and spinal fluid)	19,418
Examinations for gonococci	1,515
Complement fixation tests	21
Examinations for tubercle bacilli	2,922
Examinations for Negri bodies (smears and animal inoculations)	140
Water examinations	2,104
Milk and dairy products examinations	4,104
Miscellaneous examinations	3,350
Total	36,240

The above breakdown includes the specimens examined by the Dothan Branch Laboratory during the month of November also as this report was not received in time to be included in our November report to you.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA

NOVEMBER 1961

Live Births Deaths Causes of Death	Number Registered During November 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live Births	6,482	4,098	2,384	23.9	24.2	25.4
Deaths	2,389	1,517	872	8.8	9.0	8.9
Fetal Deaths	159	71	88	23.9	23.6	20.1
Infant Deaths—						
under one month	107	60	47	16.5	20.2	24.5
under one year	163	88	75	25.1	35.0	35.8
Maternal Deaths	2		2	3.0	4.5	5.8
Causes of Death						
Tuberculosis, 001-019	31	15	16	11.4	7.0	8.7
Syphilis, 020-029	4	2	2	1.5	1.9	0.4
Dysentery, 045-048	2	1	1	0.7	0.4	0.4
Diphtheria, 055						1.1
Whooping cough, 056					0.4	
Meningococcal infections, 057					1.1	0.4
Poliomyelitis, 080, 081	1	1		0.4		0.8
Measles, 085					0.4	
Malignant neoplasms, 140-205	317	220	97	116.7	124.5	107.9
Diabetes mellitus, 260	30	19	11	11.0	11.6	15.8
Pellagra, 281						
Vascular lesions of central nervous system, 330-334	336	214	122	123.7	129.8	126.4
Rheumatic fever, 400-402	4	2	2	1.5	0.4	0.4
Diseases of the heart, 410-443	806	552	254	296.7	281.1	297.7
Hypertension with heart disease, 440-443	142	61	81	52.3	50.7	52.8
Diseases of the arteries 450-456	56	33	23	20.6	14.9	16.6
Influenza, 480-483	10	5	5	3.7	4.8	2.3
Pneumonia, all forms, 490-493	76	43	33	28.0	31.7	27.9
Bronchitis, 500-502	2	2		0.7	3.0	1.9
Appendicitis, 550-553	2	1	1	0.7	0.4	1.1
Intestinal obstruction and hernia, 560, 561, 570	12	6	6	4.4	3.7	4.5
Gastro-enteritis and colitis, under 2, 571, 0, 764	7	1	6	2.6	6.0	3.8
Cirrhosis of liver, 581	23	16	7	8.5	4.8	4.9
Diseases of pregnancy and childbirth, 640-689	2		2	3.0	4.5	5.8
Congenital malformations, 750-759	32	24	8	4.9	4.5	4.5
Immaturity at birth, 774-776	40	17	23	6.2	6.2	7.9
Accidents, total, 800-962	172	111	61	63.3	60.4	52.4
Motor vehicle accidents, 810-835, 960	92	70	22	33.9	30.6	27.9
All other defined causes	322	182	140	118.5	135.4	139.2
Ill-defined and unknown causes, 780-793, 795	102	50	52	37.5	51.5	43.0

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

OBITUARIES

SKINNER—Marcus M. Skinner, M. D., Selma, died November 21, 1961 in a Birmingham hospital at the age of 70. The internationally known bone surgeon was a 1912 graduate of the Alabama Medical School and did post-graduate work in Boston, New York City, and England before returning to his native town, Selma.

Dr. Skinner retired in 1951 as chief surgeon and administrator of King Memorial Hospital which he had served since 1921. Since retirement, he had worked to establish the Dunn Rest Home in Selma.

Dr. Skinner was a Fellow of the American College of Surgeons, a member of Dallas County Medical Society, Medical Association of the State of Alabama, and American Medical Association.

BOUDREAU—Floyd Thomas Boudreau, M. D., Mobile, died October 14, 1961 at the age of 55. He received his medical degree from Tulane University School of Medicine in 1930 and had practiced in Mobile since 1933.

Dr. Boudreau was a board member of the American Board of Urology, Fellow of the American College of Surgeons, past-president of the Mobile County Medical Society, Medical Association of the State of Alabama, and American Medical Association.

MINNICH—William C. Minnich, M. D., Mobile, died October 19 at the age of 82. He was a graduate of the Medico-Chirurgical College of Philadelphia and had practiced in Mobile since 1945.

Dr. Minnich was medical director for the Alabama Dry Docks and Shipping Company at the time of his death.

He was a veteran of World Wars I and II.

MOORER—Monte Leroy Moorer, M. D., Mobile, died October 15 at the age of 70. He was a graduate of the University of Alabama school of Medicine and a veteran of World War I.

SIMPSON—Harry Moody Simpson, Sr., M. D., Florence, died at a Florence hospital on January 15, 1962 at the age of 70.

Dr. Simpson received his medical degree from the University of Alabama School of Medicine and interned at Polyclinic Hospital in New York City before becoming associated with Dr. Seale Harris in Birmingham.

He was a member of Lauderdale County Medical Society, Medical Association of the State of Alabama, Southern Medical Association, American Medical Association, Alabama Society of Internal Medicine, American Board of Internal Medicine, and a Fellow of the American College of Physicians.

Survivors include the widow, Ethelyn Sitzer Simpson; his mother, Mrs. Robert T. Simpson of Florence; a son, Dr. Harry M. Simpson, Jr., Florence; a daughter, Mrs. Eugene Bessell of Minneapolis, Minnesota; two brothers, Dr. Wyatt Simpson of Florence, and Judge R. T. Simpson of Montgomery; and a sister, Mrs. Kenneth Daniel of Birmingham.

The Woman's Auxiliary



With more than two-thirds of the current Auxiliary year gone by, it has been extremely gratifying and rewarding to find that such good work has been accomplished in every county Auxiliary. To begin with, the September Fall Board Meeting and Conference in Montgomery was very well attended. In evidence was sincere enthusiasm and willingness to work for the objectives of the Woman's Auxiliary to the Medical Association of the State of Alabama. The four district meetings exceeded all expectations. This is the first time in many years that all four district meetings have been held in one year.

The Southeast District meeting was held in Troy on November 8, with Mrs. John Webb, Jr., presiding. It was a great honor to have the National President-Elect of the Woman's Auxiliary to the American Medical Association, Mrs. William G. Thuss, as our guest speaker.

A feature of the meeting was a showing of hats representing safety in the home. We heard talks on "Speaking up for Medicine" and a very informative talk by Mrs. Winston A. Edwards, State Legislative Chairman, on the Kerr-Mills and King-Anderson bills. Mrs. Edwards (Elizabeth) has done an outstand-

ing job on legislation. At her own expense she has practically "stumped" the entire state giving talks to doctors' wives, urging them to become more informed concerning medical legislation.

The Northwest District meeting of the WAMASA was held on Wednesday, October 25, in Jasper. The Walker County Auxiliary members were hostesses for the meeting, and Mrs. William D. Anderson, Vice-President, presided at the luncheon meeting. Past state presidents, national and state officers, and state committee chairmen were introduced and called on for a greeting and a brief statement of their activities. Mrs. James Guin, Jr., Health Careers Chairman, outlined the program for Health Careers and told how it can be carried out in each community. She stressed the need to interest high school students in health careers and stated that if those in the field do not meet the challenge now present, soon outsiders will find the excuse to do it for us.

(To be continued next month)

Vicki Cunningham

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

March 1962

No. 9

Postgastrectomy Problems— With Special Reference To The Malabsorption Syndrome

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F. A. C. S., D. A. B., F. A. C. G.

Washington, D. C.

Today, the accepted and widely practiced procedures for the treatment of duodenal ulcer are subtotal gastrectomy of the Billroth I or II types with or without infradiaphragmatic bilateral vagotomy, and vagotomy with antrectomy, gastroenterostomy, or pyloroplasty. All of these surgical procedures alter the normal passage of food from the stomach into the small intestine and produce anatomic as well as physiologic changes

which may cause a new set of symptoms and sequelae, called postgastrectomy syndromes. These new symptoms and sequelae, which were not present before operation, occur in a relatively high percentage of patients, and may be incapacitating or more disabling than the original duodenal ulcer.

A brief review of the normal physiology of the stomach, duodenum, biliary tract, and pancreas will assist in an understanding of the abnormal motility and physiology that produce the symptoms and manifestations of postgastrectomy syndromes.

Motor Function of the Stomach

Peristaltic contractions are periodic in the empty stomach, become continuous after dis-

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tension by a meal; when empty again, the peristaltic action becomes periodic. Each small bolus of gastric content is evacuated phasically into the duodenum by movements which begin at the incisura, pass over the pyloric area, and through the relaxed pyloric sphincter. The number of boluses transferred per minute, and the size of the boluses, are greatest after a meal and decrease progressively until the stomach is gradually emptied in from two to three hours. The rate of gastric emptying is described as a linear function of the volume of gastric contents.

The rhythmic continuous pumping action which empties the distended stomach is controlled by the following three factors:

- (1) Intragastric: Distension is the major stimulus for emptying contractions of the stomach. The magnitude of the contractions is linearly related to the degree of distension.
- (2) Intestinal: The nervous and hormonal mechanisms for gastric emptying, released from the duodenum and jejunum are
 - (a) acid in the upper intestine, inhibiting gastric motility,
 - (b) fat and hypertonic solutions releasing enterogastrone, which inhibits gastric emptying, and
 - (c) degraded protein evoking the enterogastric reflex, a vago-vagal reflex, which also inhibits gastric contractions and emptying.
- (3) Systemic reflexes: Pain strongly inhibits gastric emptying.

Secretory Function of the Stomach

Hydrochloric acid is secreted phasically in the fasting state so that over a period of several hours during one or more 15 minute periods, there will be an absence of acid. The rate of interdigestive secretion is estimated to range between 30 to 60 c.c. per hour.

The digestive phase of hydrochloric acid is controlled by the following three major stimuli:

(1) Cephalic: The stimulation of gastric secretion by sight, smell, taste, or thought of food, is mediated through the efferent impulses carried by the vagus nerve. The cephalic or nervous phase of gastric secretion is responsible for about 45 per cent of the total acid production. The secretion produced by the cephalic phase is rich in acid, pepsin, and mucus.

(2) Gastric: The gastric phase is mediated through the action of the hormone gastrin, released or produced by the antral or pyloric portion of the stomach. This gastrin acts on the fundic glands to stimulate the secretion of hydrochloric acid. Two types of stimuli act directly upon the antrum to produce the release of gastrin: (1) distension of the pyloric portion of the stomach, and (2) certain secretagogues, such as lean meat or partially digested meat containing amino acids and polypeptides, alcohol and roasted grains. Gastrin secretion is inhibited by the presence of acid in the antrum.

Secretory and Motor Functions of the Duodenum, Biliary Tract and Pancreas

When acid chyme from the stomach passes into the duodenum, it evokes hormonal and local reflexes which control the flow of bile into the duodenum, the hormonal phase of pancreatic secretion, and the release of other hormones which deal with protein digestion.

The duodenal mucosa, in the presence of acid chyme, secretes enterokinase, an important hormone, which converts inactive trypsinogen from the pancreas into an active form of trypsin; trypsin breaks down protein to peptides. These peptides are broken down into amino acids by peptidases, which are also secreted by the duodenal mucosa.

The presence of acid chyme in the duodenum, particularly chyme high in fat content, causes a release of the hormone cholecys-

tokenin, which relaxes the sphincter of Oddi, contracts the gallbladder and causes a concomitant discharge of gallbladder bile, and common duct bile into the duodenum. It is this bile which is necessary for the emulsification of fats before lipase, secreted by the pancreas, can act.

Though the pancreas secretes continuously the following enzymes, trypsin, chymotrypsin, peptidases, lipase, amylase, and desoxyribonuclease, there are two main mechanisms for the stimulation of pancreatic secretion: one being the ecboic or cephalic phase, mediated through the efferent parasympathetic fibers of the vagus; and the other, the secretory phase produced by the release of secretin and pancreozymin from the duodenal mucosa when the gastric contents come in contact with this lining. Secretin, a powerful hydroytic stimulus, causes a large flow of pancreatic juice, rich in salts and low in enzymes. Pancreozymin is thought to act ecboically. It is also thought that the presence of food in the duodenum causes local reflexes which augment the hormonal stimulation of the pancreas.

It is indeed obvious from a review of the normal physiology of the stomach, duodenum, biliary tract and pancreas, that gastrectomy, which bypasses the duodenum, and vagotomy, which removes most of the parasympathetic stimulus to these organs will, no doubt, cause interference with normal physiologic function and inadequate digestion of foodstuffs which need the enzymes produced by these organs for adequate digestion.

A list of the motor, physiologic and nutritional abnormalities associated with gastrectomy, and gastrectomy with vagotomy, are listed as follows:

- (1) loss of stomach reservoir function
- (2) loss of gastric motility
- (3) loss of normal mechanisms regulating stomach emptying
- (4) rapid emptying of food into the jejunum in the state in which it was swallowed
- (5) absence, or marked decrease of hydrochloric acid, pepsin, and gastric mucus
- (6) absence of the processes of softening, liquefying, acidifying, and partial digestion of foods by the stomach
- (7) decrease in biliary function and decrease in the flow of bile from the gallbladder and common duct, because of the absence of reflexes set up in the duodenum when acid chyme reaches it, and the decreased formation of cholecystokinin
- (8) decrease in pancreatic function due to decreased secretin formation and abolition of the ecboic phase of pancreatic secretion
- (9) decrease in fat digestion due to inadequate output of bile and lipase, and inadequate time for the mixing of these juices with fat foods
- (10) decrease in fat absorption from the mucosa of the small bowel because of increased movement of food through the jejunum and inadequate breakdown of fats
- (11) decrease in protein digestion because of decreased amounts of peptidases and the other protein enzymes of the pancreas, as well as a shortened period of contact between proteins and their specific enzymes
- (12) decrease in protein absorption because of increased motility of foods through the small bowel and secondly, because of inadequate breakdown of proteins
- (13) inadequate intake, due to low reservoir of the stomach, uncomfortable symptoms associated with rapid emptying of undigested foods into the jejunum, and abolishment of hunger contractions, and, therefore, a decrease in interest in food.

Early Postgastrectomy Syndrome, Or the Dumping Syndrome

Almost all patients who have had a subtotal gastric resection will exhibit at some time or other symptoms in varying degree in the immediate postprandial period, which have been grouped together as the dumping syndrome. The symptoms experienced from fifteen to twenty minutes after the ingestion of food are epigastric fullness or distension, nausea, weakness, sweating, pallor, palpitations, and/or tachycardia, a feeling of warmth, and in severe instances, syncope, vomiting and numbness of the extremities. Objective clinical findings are tachycardia and mild hypotension.

The incidence of dumping after gastrectomy varies from two to 75 per cent; this incidence varying with the astuteness of the observer and his interest in the subject. If mild symptoms are included in an analysis, the frequency will be found in the neighborhood of the high figure of 75 per cent; on the other hand, if only those with severe symptoms are included for classification, the frequency will be in the range of from four to ten per cent. In a review of 300 gastrectomies, Ricketts and Staub noted that 78.7 per cent had some type of dumping symptoms.²³

Numerous studies have been conducted to elucidate the mechanisms which cause this syndrome. There are those who think the symptoms are psychological; however, studies thus far do not support the psychological factors as the etiologic agent. We must admit, though, that the tense and psychoneurotic patient is more likely to show this syndrome, and most likely to be incapacitated when symptoms appear.

Machella reported that the ingestion of hypertonic glucose, hypertonic protein hydrolysate, and hypertonic sodium sulfate in gastrectomized patients would produce the characteristic symptoms and signs of the dumping syndrome.^{14, 15, 16} The same symptoms were produced in normal subjects when these solutions were introduced by tube into the jejunum. Machella concluded that the

jejunal distension with concomitant sympathetic reflex was the cause of the dumping symptoms.^{14, 15}

Abbott et al., by mixing barium with food, found a close correlation between symptoms, the rate of filling, and the degree of distension of the small intestine.¹ Roberts and co-workers confirmed the work of Machella, indicating a rapid inflow of fluid into the lumen of the jejunum; they also described an increase in hematocrit, a sharp drop of from 300 to 700 c.c. in plasma volume, and a significant non-specific change in electrocardiography compatible with myocardial ischemia or sympathetic stimulation.^{18, 21, 25, 30}

Jordan, Overton, and DeBaakey demonstrated jejunal hypermotility with the dumping syndrome and felt that this probably accounted for the nausea, vomiting, and diarrhea that occur, but not for the vasomotor symptoms.¹¹ These authors confirmed the opinion of Wells and Welbourn, which held that increased contractility and motility represent the response of the intestines during the symptomatic postprandial period in patients with dumping after gastrectomy.³¹

In other studies which substantiate the fact that there is a rapid passage of fluid from the blood stream into the intestine, Peddie, Jordan, and DeBaakey felt that the decrease in the concentration of serum potassium might be responsible for the symptoms in some of the patients.¹⁹ Roberts et al., who also studied electrolyte changes with dumping, were of the opinion that since the changes in potassium and phosphate occur late and only after the administration of glucose or starch, that these electrolyte shifts are not of etiological significance in the dumping syndrome.^{18, 24, 25}

The exact mechanisms for the dumping syndrome are not known, but the major factors which have been proposed are summarized as follows:

- (1) There is rapid egress of food from the stomach.
- (2) Rapid hydrolysis of foods occurs in the

jejunum, producing a hypertonic jejunal content.

- (3) This hypertonic content plus increased osmolarity in the jejunum cause a rapid transfer of fluid from the blood plasma and the extracellular compartment into the lumen of the bowel, with a sudden drop in circulating blood volume.
- (4) Decreased blood volume and decreased cardiac output cause a sympathetic vasomotor response, producing weakness, sweating, palpitation, tachycardia, and electrocardiographic changes.
- (5) The dilated jejunum causes hyperperistalsis, which, in turn, produces nausea, vomiting, and diarrhea.

The treatment of dumping syndrome is planned around diet and diet timing, in order to decrease the effects of the above listed factors. Food is fed in frequent, small feedings, five or more meals per day, to avoid the unpleasant feeling associated with overdistension and rapid emptying of the stomach.¹² The diet should be dry, with no liquids allowed before, during or immediately following meals, in order to somewhat decrease the rate of emptying into the jejunum. If fluids are to be taken, they are allowed either 30 to 60 minutes before, or 30 to 60 minutes after the ingestion of the meal.

The diet should be low in carbohydrates, for these substances produce the highest osmolarity when introduced into the jejunum. Patients are instructed not to drink fruit juices, or eat sugar, cakes, pastries, or candy. The diet should also be high in protein and in neutral fats, because these substances are the least offenders in the production of the early postprandial dumping syndrome.²⁰ It is our plan to have the patients use a diet containing one part carbohydrate, two parts protein, and five parts fat, for a total intake of approximately 3000 calories per day.⁸

Malabsorption Syndrome

Much evidence has accumulated to show that there is maldigestion and malabsorption of fats and proteins after distal subtotal gastrectomy in from 25 to 50 per cent of the patients.^{7, 17, 26, 29} The defect in fat digestion and absorption is more frequent and of greater magnitude than that of protein.

Everson in a collective review of the literature noted a 43 per cent impairment of fat absorption, and a 32 per cent impairment of protein assimilation following partial gastrectomy of the Billroth II type.⁵ Everson and Javid, by metabolic studies on dogs, showed that 75 per cent resections lost from 24 to 32 per cent of the ingested protein and fat.^{6, 10}

Shingleton and associates, by the use of I¹³¹ labeled fat and oleic acid, found that 50 per cent of the patients with stomach resections had high stool radioactivity with I¹³¹ triolein. In 38 per cent of 33 patients, who were below ideal weight, the fat excreted equalled 25 per cent of that ingested. These authors also showed that there was normal absorption of oleic acid (split fats), but inadequate absorption of unsplit fats (triolein), indicating a deficiency of bile salts and lipase for adequate splitting of triolein.²⁷

The possible relationship of postgastrectomy steatorrhea to a decrease in the amount of bile and pancreatic juices, and inadequate mixing of foods with these secretions, is shown by the work of Lawrence et al. They demonstrated a marked decrease in pancreatic secretion when hypertonic solutions were administered into the small bowel.^{2, 9, 13} An improvement in postgastrectomy steatorrhea was noted by Vanamee and associates in 70 per cent of 13 patients when given hydrochloric acid before meals. It was thought that the hydrochloric acid evoked the production of secretin from the small bowel, which, in turn, stimulated the pancreas and improved the flow of pancreatic secretions.^{28, 29} A definite improvement in I¹³¹ protein absorption in gastrectomized patients

was described by Shingleton when bile salts and pancreatic extracts were added.²⁷

Everson is of the opinion that the main factors responsible for varying degrees of impairment of fat and protein assimilation following total gastrectomy are as follows:⁶

- (1) decreased stimulation of pancreatic secretion
- (2) improper or inadequate mixing of food with pancreatic and biliary secretions
- (3) increased intestinal motility, and
- (4) loss of the reservoir function of the stomach

In our own experience with subtotal gastrectomy of the Billroth II type, we found that of the 30 per cent who lost weight after surgery, 16 per cent had significant steatorrhea, which could be easily recognized by examining the stool. These five patients with significant steatorrhea had been treated with increased feedings of fat and protein and various pancreatic and bile salt preparations, but showed little or no improvement in the steatorrhea and no weight gain. Two of the five had reached the point where they felt worse after the surgery than before, and seemed to be sorry that they had submitted to the gastrectomy.

These five patients with steatorrhea were placed on a new, high potent lipase activity extract, which is known as pancreatic enzymes concentrate.* The extract is supplied in capsules of approximately 100 mg. each; each capsule contains 2000 units of lipase activity, having the digestive power for 18 gms. of dietary fat; trypsin, having digestive power for 34 gms. dietary protein; and amylase, having digestive power for 40 gms. dietary starch.

The lipase activity of the extract was determined by a method based upon the libera-

tion of glycerol from fat hydrolysis. One unit of lipase activity will hydrolyze seven to eight mg. of fat.

Two to three capsules were given with each major meal, and one with each large between-meal feeding. Each patient was observed and weighed at regular periods, and the stools were examined for fat. Careful attention was paid to maintaining a diet of five feedings, high in protein and fat, and equal to about 2500 calories per day.

A description of each case treated in this manner follows.

Case Reports

- (1) Case No. 5872: f, w, 35, F.L. Gastrectomy for duodenal ulcer on 9/20/58. Preoperative weight 118 lbs.

10/20/58 Eating well; not gaining weight; present weight 111 lbs.; stools bulky, yellowish.

1/5/59 Given diet instructions and pancreatic preparation, as there had been no improvement; stools fatty; weight 111 lbs.

3/6/59 No improvement; weight 109 lbs., or a loss of 9 lbs. from pre-operative weight.

3/18/60 Felt weak; could not eat; had some nausea; stools fatty; weight 110 lbs.

*3/18/60 Given instructions to take 2 Cotazym® pills with major meals.

4/1/60 Felt better; eating more; stools near normal color; weight 110 lbs.

4/22/60 Improving; eating more; stools normal; 112 lbs.

10/10/60 Hungry all the time; gained 14 lbs., weighed 124 lbs.; now too heavy; stools normal.

*Pancreatic enzymes concentrate, "Cotazym" was supplied by Mr. Kenneth Ericson, Director Professional Services, Organon, Inc., West Orange, New Jersey.

POSTGASTRECTOMY PROBLEMS

Total loss of 8 pounds in 5 months following surgery. Following Cotazym® therapy, weight gain of 14 pounds in approximately 7 months, and return of stools to normal.

- (2) Case No. 5362: m, w, 47, J.K. Gastrectomy for duodenal ulcer on 11/14/57.

3/7/58 Felt well; eating well; gained 12 lbs. from preoperative weight of 104 lbs.

8/1/58 Vomiting after meals; stools yellow; loss of 20 lbs., weighed 96 lbs.

Tranquilizers, diet, and various pancreatic and bile preparations recommended.

12/19/58 No improvement; weighed 95 lbs.

4/17/59 No improvement; tired; weighed 95 lbs.

Patient hospitalized; GI X-rays normal; stools loaded with undigested protein and fat; some diarrhea. Pancreatic pills given.

6/5/59 Eating better; stools same; no diarrhea; weighed 96 lbs.

10/26/59 Eating better; stools same; weighed 95 lbs.

1/18/60 No complaints; stools fatty; weighed 96 lbs.

*7/18/60 2 Cotazym® pills with each meal started; weighed 95 lbs.

8/22/60 Eating very well; stools normal color; weighed 104 lbs.

9/12/60 Well; stools normal; eating everything; weighed 106 lbs.

Total loss of 21 pounds in 28 months. Weight gain of 11 pounds in 2 months, with stools returning to normal, with Cotazym® therapy.

- (3) Case No. 4837: f, w, 58, H.J. Gastrectomy for duodenal ulcer on 2/26/57. Patient developed postoperative pan-

creatitis, and was hospitalized for 30 days, being quite ill.

Preoperative weight 129 lbs.; immediate postoperative weight 109 lbs.

Dumping severe for 8 months; weighed 90 lbs. Dumping moderate for next 12 months; steatorrhea significant.

Various pancreatic and bile preparations used with no improvement. Diet adjustments made.

*1/11/60 Cotazym® capsules taken with meals; weighed 84 lbs.

1/22/60 No vomiting; no heart palpitations; stools normal color and consistency; weighed 86 lbs.

4/8/60 Felt well; eating much more without symptoms; weighed 92 lbs.

6/3/60 Eating very well; enjoying foods; normal stools; happy; weighed 92 lbs.

9/15/60 No symptoms; eating many foods; normal stools; weighed 99 lbs.

Total weight loss of 45 pounds in 3 years (35 mo.)

With Cotazym® therapy, weight gain of 15 pounds in 9 months, stools normal, and eating well.

- (4) Case 126: m, w, 39, J.M. Gastrectomy for duodenal ulcer on 9/20/56.

Patient did well until 7th month of 1959, when he noticed gradual loss of weight; stools large, bulky, yellowish.

Weighed 168 lbs. before July of 1959 (Preop. wt.).

2/10/60 Weighed 128 lbs.; tired; poor appetite; stools fatty; some nausea and sweating after eating; loss of 40 pounds.

*2/10/60 Instructed on use of Cotazym® with meals, type of diet recom-

mended, with instructions for five feedings per day.

3/7/60 Much improved; weighed 141 lbs.; stools normal.

4/25/60 Eating normally; good appetite; normal stools; weighed 158 lbs.

9/12/60 Felt normal; weighed 161 lbs.; bowel function and stools normal.

Total loss of 40 pounds of weight in 7 months.

Weight gain of 33 pounds in about 7 months on Cotazym® therapy; stools normal and appetite returned to normal.

(5) Case No. 6884: m, w, 59, J.J. Gastrectomy for duodenal ulcer with massive hemorrhage on 9/15/59.

9/30/59 Eating moderately well; no dumping; weighed 149 lbs.; pre-operative weight 160 lbs.; lost 11 pounds.

Given diet program.

12/21/59 No better; felt tired; noticed stools large, bulky, light yellow; appetite poor; weighed 141 lbs. Given pancreatic and bile medication.

2/12/60 Felt weak; could not eat; losing weight; stools very light and fatty; weighed 138 lbs. Weight loss of 22 pounds.

*2/12/60 Started on 2 capsules of Cotazym® with meals, and instructed on proper diet.

4/21/60 Much improved; appetite about normal; stools normal; weighed 150 lbs.

6/3/60 Felt normal; weighed 158 lbs.; eating everything.

7/21/60 No complaints; eating very well; weighed 162 lbs.

9/22/60 Eating well; indulging in all kinds of foods; on three meals a day; weighed 168 lbs.

Loss of 22 pounds in 5 months.

Weight gain of 30 pounds in 7 months on Cotazym® therapy with return of normal stools and normal appetite.

Summary of the five cases studied is as follows:

1. weight losses of 8 to 45 lb. in 5 to 35 months; averages: weight loss 27.2 lb., 16 months
2. definite evidence of steatorrhea in all cases
3. loss of appetite

Summary following Cotazym® therapy, 5 cases:

1. weight gains of 11 to 33 lb. in 2 to 9 months; averages: weight gain 20.6 lb. in 6.4 months.
2. complete disappearance of steatorrhea in 3 to 5 weeks
3. eating well, enjoying foods, good appetite

We are in the process of further substantiating our clinical trial of this new high potency pancreatic enzyme concentrate by radioactive studies with triolein and repeated quantitative measurements of fat in the stool. We also hope to determine if there is any difference in fat absorption in patients with gastrectomy and those having antrectomy and vagotomy.

Weight Loss Syndrome— Nutritional Deficiency Syndrome

One of the very important, if not the most important difficulty or disadvantage of any type of subtotal gastrectomy is body weight. From 16 to 75 per cent of patients following gastrectomy may show inability to regain preoperative weights; about 50 per cent never regain their ideal weight.²⁰ Rauch described an average weight loss of 13.8 pounds after

75 per cent resections with Hofmeister jejunostomy.²¹

In a comprehensive review of 300 gastrectomies, Ricketts and Straub noted that 89.6 per cent showed weight loss that varied from three-fourths of one pound to 104 pounds, with an average weight loss of 21.2 pounds. Only 3.7 per cent showed a weight gain averaging 23 pounds. Also noted was the observation that 28 per cent of the entire series ranging from one to 26 years postoperatively showed serious impairment of their nutritional status.^{22, 23}

Postoperative nutritional deficiency is due in the main to inadequate caloric intake and to excessive fecal loss of nutrients. The principal cause of inability to gain weight is a decrease in food intake. It is estimated that there is a 20 to 35 per cent decrease in oral intake after gastrectomy.²⁸ Roberts and associates found that most patients after gastrectomy had an intake of less than 1800 calories per day.²⁵

The reduction in food intake is in part due to the decrease in hunger contractions from partial removal of the stomach. When vagotomy, or the removal of the cephalic phase of digestion is added to resection, there is a greater decrease in stomach motor contractions and thus a decreased desire for food. It is thought by most, that the principal cause of inadequate intake is a voluntary limitation of food intake because of the disagreeable feeling of fullness associated with a small gastric pouch, and from the symptoms of the dumping syndrome which follow sudden emptying of hypertonic foods into the jejunum.^{28, 30}

This failure of intake associated with distress after eating is treated by careful education of the patient in the type of foods to eat, and the habit of consuming small meals at frequent intervals. It is necessary to take time with the patient in order to take a careful dietary history. Find out those foods which cause the most discomfort, and substitute those high in fats and proteins for the starches or sugars.

Breakfast is never fruit juice, donut, and coffee! Breakfast should be a thick cereal with butter and cream, thoroughly buttered toast, and fried eggs with a generous helping of bacon. No sugar is permitted, and no coffee, tea, or other beverages until 30 to 60 minutes after a meal. For other meals, the soups must be thick, meat an important part of the diet, and desserts not too sweet.

Hypoglycemic Syndrome

A patient who had had an antrectomy and vagotomy for chronic duodenal ulcer recently described an experience which is characteristic of an exaggerated response to the ingestion of carbohydrates or the hypoglycemic syndrome. She drank a large glass of cold orange juice and ate ice cream for lunch one hot day, and within two to two and one-half hours she developed weakness, sweating, and hunger sensations. She immediately ate a few slices of plain cake, and her symptoms gradually disappeared.

Hypoglycemic syndrome is produced by a drop in blood sugar levels to hypoglycemic levels after an immediate high elevation of the blood glucose level, following the ingestion of carbohydrates, particularly glucose. Though it has been reported that many subjects after gastrectomy show a rise in blood glucose level to abnormally high levels in the first hour after oral glucose and an abnormally low blood glucose level in the second or third hours after the ingestion of glucose, only a limited number develop or experience symptoms of hypoglycemia.⁴ The exact mechanism for this hypoglycemia is not known. It has been suggested that the severe hypoglycemic levels represent an extreme response of the pancreas to sudden hyperglycemia.¹² Butler is of the opinion that the mechanism for the hypoglycemia is that of an exaggerated portal hyperglycemia, which causes the liver to be refractory to the glycogenolytic stimuli of hyperglycemia and epinephrine.³

The hypoglycemic syndrome may go un-

recognized, since the symptoms are somewhat similar to and may overlap those of the immediate postprandial dumping syndrome. However, whereas the dumping syndrome corrects itself with rest, the hypoglycemic reaction is treated by the immediate ingestion of food.

Proximal Loop Syndrome

The symptoms of this syndrome are periodic vomiting of large amounts of bile stained material (500 c.c.), which relieves the pre-existing sense of fullness, distension and pain. Frequently, the pain and discomfort are present in the upper quadrants of the abdomen; it is often on the left, when the proximal loop has been brought to the greater curvature of the stomach. At times on examination, a mass is palpable through the abdominal wall before the periodic emptying of the dilated proximal loop. Partial obstruction of the stoma or the proximal loop at various points by adhesions, angulations, or volvulus causes the accumulation of large amounts of bile and pancreatic juices. It is difficult to diagnose this syndrome by barium studies.

If the symptoms are severe enough, surgical exploration with correction of the obstruction or entero-enterostomy is indicated. The literature contains reports of gangrene and perforation of the proximal loop from prolonged overdistension.

Conclusions

There is no doubt that gastrectomy, regardless of variety, and vagotomy with other surgical procedures, will cure from 85 to 97 per cent of the duodenal ulcers. There is also no doubt but that these procedures are not cures for ulcer patients, for these procedures alter the normal passage and digestion of foods so that 50 to 75 per cent of the gastrectomized patients develop symptoms of the dumping syndrome, 25 to 50 per cent show maldigestion and malabsorption of fats and

proteins, about 50 per cent never regain their ideal weight, and from 10 to 20 per cent show serious impairment of their nutritional status.

Therefore, in evaluating the success of operative procedures for the management of duodenal ulcer, not only should the ulcer recurrence rate be used as a criterion, but the serious impairments in gastrointestinal physiology and food digestion must also be weighed.

It is obvious that other surgical procedures are needed for the cure of duodenal ulcer which will give a high incidence of ulcer cure rate, and which will interfere less with normal gastrointestinal physiology and digestion than those practiced today.

Until such time as they are forthcoming, it is the responsibility of the surgeon and physician to implement the abnormalities which exist after gastrectomy. The patient should be cared for continuously for life by careful, frequent, clinical observations, by individual dietary education and management, and by the use of specific supplementary therapy to rehabilitate the patient to as near normal as possible.

The surgeon's job is not complete when the patient recovers from the operation. The surgeon must work hand in hand with the physician in the development of an individual management program for each patient with a gastrectomy in order to achieve a therapeutic success.

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Gynecic Malignancy—

Our Responsibility The Cervix Only?

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By midnight, December 31, 1961, gynecic malignancy will again have taken its annual toll of more than 30,000 women.

Approximately 50 per cent of these deaths, 16,000, will have been the result of carcinoma of the cervix. This fact, the accessibility of the cervix for visual and palpable evaluation, the development of the technique of carcinoma detection by exfoliative cytology, and the apparent reduction of mortality associ-

ated with carcinoma of the cervix have had one result. The spotlight of attention in medical literature seems to have been logically focused on the cervix.

What of the 16,000 women who have been and will be the victims of those malignancies that affect the other areas usually associated with gynecic malignancy, and still another area that is by nature, even though it may not be by specialty, included?

Though, from a percentage evaluation, malignancy of the vulva and vagina are apparently insignificant when considering all malignancies in women, six per cent of all gynecic malignancies (malignancies of the reproductive organs) are associated with these areas.

The area of the vulva is responsible for five per cent of these malignancies. Actual neglect camouflaged by apparent therapeutic activity by both patient and physician con-

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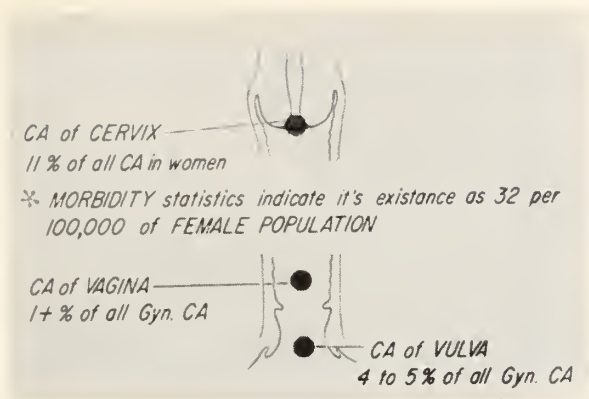


Figure I.

Approximately 40% to 50% of all gynecological carcinoma is accounted for by the vulva, vagina, and cervix.

tinues to result in unnecessary death due to inoperability. Many patients have applied, and many physicians have prescribed, tons of powder and ointment and gallons of lotion during periods of as long as twenty years while these slow growing lesions gathered momentum and finally killed.

If the cervix is accessible for evaluation, the vulva is an area that certainly cannot escape the visual inclusion of anyone doing a proper gynecological examination. If the excuse is used that a great percentage of the good results in treating the cervix are associated with early diagnosis in the insitu state, let me remind you that the intraepithelial lesion of the vulva occupies a prominent place in this predominantly squamous cell lesion of the vulva. There is adequate warning, for nature distresses the woman with, at times, intolerable pruritis in 40 per cent of the cases. The problem is to nudge the physician into the realization that more than local therapy is necessary. The existence of a broken skin area or the presence of a discolored mole means only one approach is justified—adequate biopsy for tissue evaluation. The use of X-ray therapy as the primary mode of treatment is to be condemned. The approach must be radical surgery with superficial and deep gland resection. This is the primary

approach. There is great disagreement as to whether X-ray therapy should be employed as additional therapy since these lesions are predominantly irradiation resistant. The response to surgery is excellent.

The answer to cure is early diagnosis made possible by adequate early biopsy and this can only be done if the patient is seen regularly and intelligent physical examination done.

The vagina, fortunately, contributes a very small part in the picture of gynecic malignancy. Only one per cent is made up of this epidermoid type lesion. The hazard lies in its location, not only for treatment purposes, but for diagnostic purposes. The speculum slides over the area of involvement and smear or biopsy are aimed at the cervix and/or endometrium. The result can be that this death dealing lesion can be overlooked because all attention is directed toward more common sites. Vaginal smear can aid in detection. Biopsy alone can make the diagnosis. Therapy is radical surgery. The results of irradiation therapy are poor. Found in the woman past 40, this lesion must be considered when spotting occurs and the search must be persistent when there has been failure to find the suspected cervical or endometrial lesion. Accurate history and careful physical examination, alone, can make the diagnosis.

The cervix occupies the position of the star performer. It accounts for eleven per cent of all malignancy in women and 50 to 60 per cent of all gynecic malignancy. The overall picture of patient survival in carcinoma of the cervix has jumped to approximately 60 per cent with the majority of malignancies being diagnosed, staged as 0 and 1. This early diagnosis has been made possible by early detection by the routine use of exfoliative cytology as a screening procedure when examining women of all age groups, pregnant or non-pregnant.

Traut and Papanicolaou, when advocating this procedure in 1938, presented the physician with a lethal weapon against carcinoma

of the cervix. Reduction of the number of inoperable lesions and an eventual increase in cure rates depends on early detection by smear, prompt biopsy diagnosis and adequate correct therapy, which, at present, is still recognized as a combination of X-ray and radium. However, this improvement cannot be automatic. It cannot be the result of mass screening or by the employment of "do it yourself kits." It can only be the result of a concerted drive for cooperation of patients to present themselves for yearly physical evaluations. Furthermore, it can only result if the conscientious physician will do an adequate history and physical examination and, in addition, use those laboratory aids presently available. Our goal must be—"Every physician's office a cancer detection center." With this attitude, we can agree with Lund who states that "the epitaph of carcinoma of the cervix has been written, the result of exfoliative cytology."

As the reward of routine screening for early detection, six-tenths per cent of all office patients, pregnant and nonpregnant, examined in our private practice were found to have cervical malignancy. Our youngest patient with invasive carcinoma was 19.

We reported in 1958 that 67 per cent of all carcinomas of the cervix treated by our group in private practice were detected while asymptomatic and unsuspected. This is the reward of routine smear screening and prompt biopsy verification. The advanced lesion is rarely seen. Elimination of this advanced lesion should be the goal of all practitioners. With prompt, adequate and correct therapy, the fatality toll of 16,000 deaths annually, the result of cervical carcinoma, can be reduced. While this vigilance continues against carcinoma of the cervix, we must not lose sight of the other 16,000 women who are destined to die of malignancies in other parts of the reproductive system. The focal point of our thorough and systematic screening evaluation must include an evaluation of the entire woman.

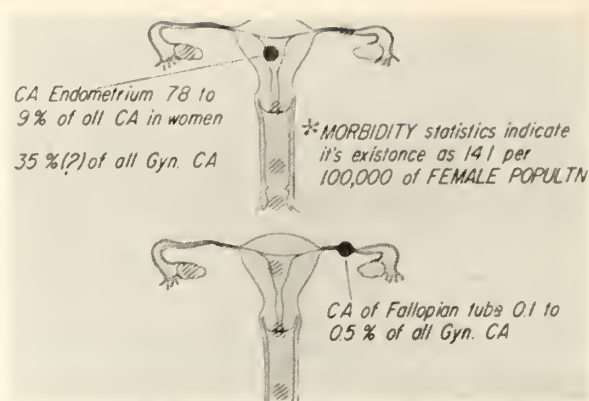


Figure II.

35% of gynecological malignancy is accounted for by endometrial and fallopian tube malignancies.

By present statistics, carcinoma of the endometrium trails that of the cervix very closely. It has been quoted by various authors as existing once in every three to eleven cases of carcinoma of the cervix. However, some authors have reported its incidence in routine office practice as approximately one to one. This has been explained in various ways. Recently, the thought has been that this increased incidence is due to a liberalization of diagnostic standards for carcinoma of the endometrium. Regardless, except in centers top heavy with cervical carcinoma funneled there for therapy, the realistic figures approach nearly one to one. Corscaden cites the incidence as 7.8 of all malignancies and approximately 35 per cent of all gynecic malignancies. The age of occurrence is somewhat later than that of the cervix. Our youngest patient was 38 years of age.

Here, as in all other sites widespread, suspicion with early diagnosis based on careful examination is the answer.

Stimulated by our realization that 67 per cent of all cervical carcinoma in our private practice were detected and treated when asymptomatic, we evaluated our results with Papanicolaou detection of endometrial carcinoma. We found this to be only 30 per cent dependable in our office and then only on

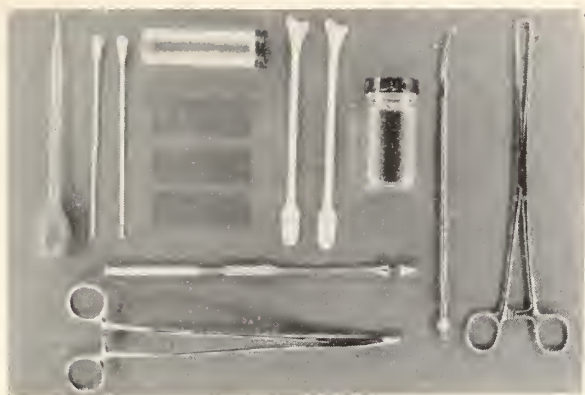


Figure III.

Instruments necessary for an adequate pelvic evaluation are demonstrated. Ayer Spatuli—Aspiration Bulb—Aspiration Curet—Gusberg Biopsy Forceps—Punch Biopsy Forceps—Tenaculum—10% formalin solution for biopsy and 70% alcohol for Papanicolaou smears. Gloves and speculum not shown.

cases which had suspected lesions. We turned to the routine use of endometrial evaluation with either Novak or Randall curettes.

To date, we have done over 9,000 endometrial samplings. The result of preliminary reports based on 4,520 endometrial samplings taken in our office showed 15 per cent were asymptomatic when detected and another 15 per cent have been detected promptly after minimal symptoms which were classified by the late Dr. Johnson of Louisville as the type in which procrastination of investigation would have resulted in a delay of six months to one year. We recognize the discomfort of the procedure, but point to the results when it is used. We would not quarrel with those who would not use it routinely, but appeal to use it when the symptoms are so minimal that the patient might resist hospital admission for complete dilatation and curettage. A word of warning! This should not replace the dilatation and curettage. When symptoms are present and endometrial sampling is negative, the dilatation and curettage is a necessity. Remember that this de-

tection procedure is only a part of the investigation of the woman patient to be always associated with a complete history and physical. Prompt detection permits prompt diagnosis and adequate therapy. Adequate therapy is a combination of surgery, bilateral salpingo-oophorectomy, hysterectomy and irradiation. This is a large segment of gynecic malignancy. Great inroads can be made in reducing the 16,000 deaths expected during 1962 from malignancies other than carcinoma of the cervix if asymptomatic and early endometrial carcinomas are detected and treated.

Rarely does cytology and never does endometrial biopsy contribute to the detection and diagnosis of two additional malignancies that constitute true gynecic malignancy.

Carcinoma of the Fallopian tube is very rare and constitutes one-tenth to five-tenths of one per cent of all gynecic malignancies.

Diagnosis is usually made at the time of laparotomy or in the pathology laboratory, accidentally, after co-existing lesions had been removed. The lead to this pathology can be obtained by a suspicion of unexplainable uterine bleeding or palpation of an adnexal mass. Traut calls attention to the existence of a honey colored discharge. Investigation should produce the answer. The mortality rate is high, diagnosis is often made late. Only radical surgical removal can produce results. At surgery when this lesion is found as well as in ovarian malignancies, Papanicolaou smears are made of the peritoneal cavity. Smear interpretation should be done during surgery. If cells are present, intra-abdominal thiotepa is used.

Ovarian malignancy occupies the honor of being the number three ranking cancer of the female genital tract. It accounts for six per cent of all malignancy in women and 20 per cent of all gynecic malignancy. It is the silent, sneaking killer of women. It is often asymptomatic until the time of killing. The Papanicolaou smear and endometrial biopsy again fail to aid, except very rarely. The

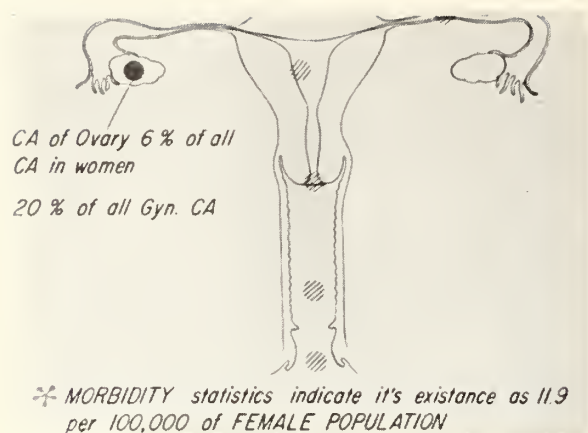


Figure IV.

An additional 20% of gynecological malignancy is accounted for by the ovaries.

mortality rate is extremely high because of lack of proper routine evaluation of the female pelvis and prompt exploration when adnexal masses are discovered. Except in carcinoma of the cervix and endometrium, the answer to detection lies almost entirely in complete history and adequate physical evaluation. The greatest aid to evaluation of the pelvis is still the rectovaginal abdominal examination. Only by the technique demonstrated can the cul-de-sac, ovarian fossae and posterior surface of the uterus be adequately palpated. Emphasis must again be directed to the fact that laboratory aids have limitations. The answer is in physical examination. Aspiration of cul-de-sac fluid for Papanicolaou evaluation as well as culpotomy or culdoscopy may give some assistance. It is in these cases that extensive surgery, bilateral salpingo-oophorectomy, total hysterectomy, omentectomy and chemotherapy, at the time of surgery—divided between instillation in the peritoneal cavity and intravenous administration—followed later by X-ray therapy may give most hope.

For completeness, choriocarcinoma must be considered. In our area this is extremely rare. We found the incidence was one in 100,000 deliveries in a survey we completed in 1960. It is always secondary to some form



Figure V.

Rectovaginal-abdominal examination as demonstrated, associated with an accurate history, is still the basis for successful evaluation of women.

of pregnancy and in 50 per cent of instances follows hydatid mole. Accurate pathological diagnosis is a necessity since the choriocarcinoma malignum is still almost 100 per cent fatal regardless of therapy. When diagnosed, radical surgery and methylnitrosourea offer some hope. Of great importance is to eliminate the confusion of mismanagement due to misdiagnosis. Only adequate consultation by expert, specialized pathologists as afforded through the Albert F. Mathieu Choriocarcinoma Registry will give the answer.

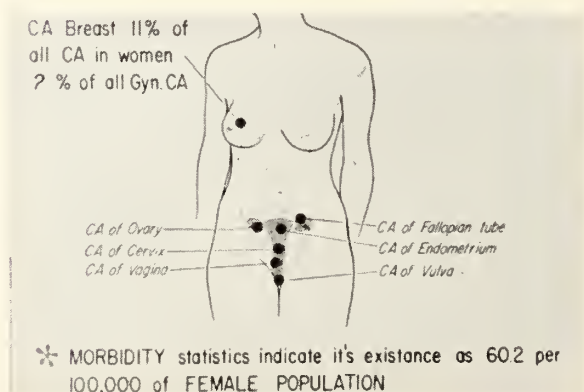


Figure VI.

The breast must be included as an integral part of the examination of all women.

Indications exist that chemotherapy may materially increase hope for cure.

Finally, we must emphasize our belief that only an evaluation of the entire woman by accurate history and physical will enable us to approximate our goal of writing the epitaph not only for carcinoma of the cervix, but for all gynecic malignancy.

One important anatomical area included in some locations in gynecology and limited in other areas to general surgery is the breast. This accounts for from 30 to 60 per cent of all malignancies in women. Accurate figures are not available. Only by adequate physical examination and palpation of the breasts of all obstetrical and gynecological patients and by recognition of the fact that soft tissue X-ray technique of the breast is a valuable adjunct, when indicated, can these early lesions be found.

Warning to include this area as a part of the evaluation of every woman patient seems unnecessary, still it is frightening when one is confronted by a woman who expresses sur-

prise when routine examination of the breast is requested. As a part of your examination, self-breast examination should be suggested to all patients.

Conclusion

The value of detection and diagnostic aids in conquering malignancies of the female reproductive organs has been reviewed.

We must again re-emphasize the fact that accurate history and a carefully done complete physical examination is the real basis for early detection, diagnosis and therapy. As in obstetrics, it can often be the basis of prevention of complications.

Be thorough! Make your office a cancer detection center so that in the future during a 20 minute discussion of this subject, another two women will not have died of this malignancy.

Two Practical, But Often Neglected, Aspects Of The Management Of Peptic Ulcer

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The dietary management of peptic ulcer, supplemented by antacids and antispasmodics, is well described in any of the standard references, is entirely familiar to all, and need not be repeated here. While no one would question its value in the treatment of the usual ulcer, there are many severe or complicated ulcers in which this type of therapy is inadequate. There are two procedures, often neglected, which are extremely useful in handling the difficult case, namely, gastric aspiration and anticholinergic drugs given parenterally. In fact, these two procedures are far more effective in the relief of pain than any diet or antacid that has ever been employed. The purpose of this communication is to emphasize the value of gastric aspiration and parenterally administered anticholinergic drugs in the diagnosis and treatment of patients having peptic ulcer.

Gastric Aspiration

Technique

A conventional plastic Levine tube is passed into the stomach through either the nose or mouth, the stomach is emptied manually and the volume and character of the contents noted. The tube is then attached to either an intermittent (Gomco) or constant (Wangensteen) suction apparatus. It may be left in place for several days with continuous aspiration or, preferably, may be removed the morning following overnight suction (10-12 hrs.) and, if necessary, replaced the next evening. The volume, degree of acidity, description of contents, the presence or absence of blood, and the effect of the procedure upon abdominal distress are recorded.

Indications

Indications for gastric aspiration are numerous but actually may be grouped under two headings: (1) diagnosis and (2) treatment.

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Presented at the Medical Progress Assembly at the Tutwiler Hotel in Birmingham, Alabama, on September 19, 1961.

Diagnosis

At one time the degree of acidity was considered all important and constituted the major indication for gastric aspiration. While the dictum "no acid—no ulcer" is generally accepted, the degree of acidity or the exact pH is relatively unimportant. Obviously, a persistent histamine achlorhydria cannot be ignored nor an excessive secretion of hydrochloric acid in the range of 40-50 mEq per hour (normal being two to four) as seen in the Zollinger-Ellison syndrome.

The exact volume has little practical significance unless excessive amounts are present. Six hundred c.c. of aspirate or more following 10-12 hours of constant suction would indicate either pyloric obstruction or hypersecretion. The presence of recognizable food particles suggests the former. It is important to remember that in addition to mechanical obstruction or hypersecretion, excessive amounts of aspirate may be caused by gastric atony following vagotomy¹ or by a neuropathy from other causes.²

Blood in the overnight aspirate may be either gross or occult. Gross blood indicates bleeding at any site from the mouth to the ligament of Treitz. Occult blood is of little or no diagnostic significance since irritation from the tube can produce enough bleeding to be detected chemically.

Gastric cytology requires a special technique which is beyond the scope of this communication. It is of value only in institutions which have a competent, interested pathologist. Preliminary reports³ concerning fluorescence of neoplastic cells in the gastric aspirate of patients who had been given tetracycline previously, have been encouraging. In hypertrophic gastritis and in certain other diseases of the stomach, the amount of albumin lost intraluminally can be measured by the intravenous administration of I¹³¹-labeled albumin or PVP followed by aspiration of the gastric contents.

One of the most useful and least emphasized diagnostic features of gastric aspiration is the distinction between pain arising from organic disease and that from a functional disorder. Complete relief of pain by this procedure is presumptive evidence of organic disease even in the patient with normal X-rays. On the contrary, when the discomfort of the gastric tube exceeds the pain of which the patient complains, it is probable that one is dealing with a functional disturbance rather than organic disease.

Treatment

Two phases of treatment in which gastric aspiration has practical, clinical value are gastric retention, regardless of cause, and intractable pain. In patients having gastric retention, continuous suction over a period of several days may be employed; but, electrolyte disturbances and the possibility of erosion of the esophagus should be borne in mind. A simpler and probably safer procedure is overnight suction with feedings during the day.

In patients whose obstruction is due to pylorospasm or edema, relief of the obstruction may be expected within three to five days following institution of treatment. If retention persists, however, it is wiser to proceed with surgery on the assumption that the obstruction is due either to scarring or atony.

Another useful, though seldom employed procedure, is overnight suction in patients having intractable pain. The observation of complete and sustained relief of pain in patient after patient is convincing evidence that this is not fortuitous, but actual cause and effect.

Anticholinergic Drugs

One of the greatest advances in recent years in the treatment of ulcer is the use of anticholinergic drugs given parenterally.

The mechanisms of action in the relief of pain by these agents have been extensively reviewed and need only brief mention at this time. It has been shown^{4, 5} that following parenteral administration of Banthine[®] or similar compounds, gastric motility is abolished. The cessation of motility, rather than decreased secretion or interference with sensory pathways, is believed to be the mechanism of the dramatic relief of pain so often seen following this form of therapy. These effects may also be obtained in part with atropine or the belladonna alkaloids, but their side effects in the doses required are usually so severe as to prohibit their use.

In evaluating the effect of a drug upon relief of pain, one must bear in mind that there are two components of ulcer pain: (1) visceral and (2) somatic. In our experience the visceral component of ulcer pain is promptly relieved by potent anticholinergic drugs given either intravenously or intramuscularly, whereas the somatic component may persist. For illustration, in a patient whose ulcer has penetrated into the pancreas, epigastric pain will be relieved entirely, but pain in the back may continue. Intravenous administration of a potent drug relieves visceral pain in a matter of minutes. Since this is not practical in most cases, the drug is usually administered intramuscularly every six hours.

Contraindications to the use of anticholinergic drugs are (1) pyloric obstruction and (2) massive hemorrhage. In pyloric obstruction, the stomach is paralyzed and therefore the condition is aggravated. In massive hemorrhage the drug theoretically may interfere with the control of bleeding, and certainly could render emergency surgery technically difficult because of smooth muscle paralysis. Other possible contraindications are glaucoma and prostatic hypertrophy.

It has been stated that anticholinergic drugs may give a false sense of security in that pain may be relieved although the ulcer still persists, and therefore should not be used. Our experience at Duke Hospital in

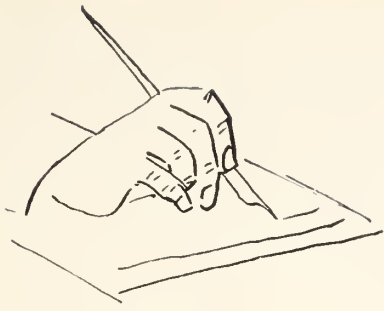
over 1,000⁶ patients would lead one to believe that such reasoning is fallacious, as silent perforation or bleeding has not occurred in a single patient treated in this manner.

Summary

Most cases of uncomplicated peptic ulcer respond promptly to conventional diet, antacids, antispasmodics and anticholinergic drugs given by mouth, and constitute no problem. Patients having a severe ulcer whose pain has persisted despite conventional treatment, are completely relieved within minutes by the use of overnight gastric aspiration and parenterally administered anticholinergic drugs. Furthermore, they remain symptom-free and the ulcer apparently heals. The intelligent use of gastric aspiration combined with a potent anticholinergic drug, parenterally administered, is highly effective in the treatment of peptic ulcer.

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Editorials

FIRST ANNUAL SESSION DATE DISCOVERED

Alabama physicians will convene April 26-28 in Municipal Auditorium in Birmingham for the 101st annual session of the Medical Association of the State of Alabama.

This meeting will mark the 25th time that the Jefferson County Medical Society has played host to the Association since it was reorganized in 1868.

Some of the early history of our Association is somewhat sketchy since we do not have a complete set of the Transactions of the Association. Our set here in the Association's headquarters building dates back to 1852. We know, however, that the Association was organized on Wednesday, December 1, 1847, when delegates from medical societies of Alabama met in the old Waverly House in Mobile for the purpose of establishing an association. This meeting was reported in the December 2, 1847, issue of the *Alabama Tribune* newspaper.

Dr. Emmett B. Carmichael, professor of biochemistry at the Medical College of Alabama and a researcher on the history of our Association, has just discovered that the first annual session was held in Selma on March 8-9, 1848. This he discovered in the April, 1848, issue of the *Medical News and Library*. The article states that the following physicians were elected at that meeting. Dr. R. Lee Fearn, president; Drs. S. H. Holland, B. R. Hogan, vice-presidents; Dr. J. Marion Sims, recording secretary; Dr. H. V. Wooten, corresponding secretary; Dr. A. G. Mabry, orator. Drs. William B. Johnson, P. H. Lewis, A. Lopez, B. R. Hogan, H. V. Wooten, D. H. Bytherwood, J. E. Prestridge, B. A. Blakey,

Edward Garnitt, and F. A. Bates were elected to represent the Association in the American Medical Association.

It is interesting to note that the president elected at the first annual session in Selma was from Mobile and that Dr. M. Vaun Adams of Mobile will be elevated to the presidency of the Association at our 101st annual session.

If we had a complete set of the Transactions we could learn many more interesting things about our organization, so if you happen to have a copy of the 1848, 1849, 1850, or 1851 Transactions and wish to donate them to the Association, they would greatly be appreciated.

COLOR TELEVISION AT ANNUAL SESSION

The department of medicine of the Medical College of Alabama in cooperation with the Ciba Pharmaceutical Company will televise on a closed circuit a color teaching demonstration on "Problems in Interpretation and Management of Chest Pain" from 9:30 to 10:30 on Friday morning.

Dr. Tinsley R. Harrison, professor of medicine; Dr. James B. McElroy, instructor in medicine; a group of students and junior physicians will conduct the demonstration.

Physicians watching the demonstration on the large screen in the Municipal Auditorium will have an opportunity to question directly the distant demonstrators.

The department of medicine, the program committee of the Jefferson County Medical Society, and Ciba are to be congratulated for arranging such an outstanding feature.

VENEREAL DISEASE

The State Department of Health section in this issue of the Journal carries a report on the eradication of syphilis.

According to the Communicable Disease Center in Atlanta, infectious syphilis has been increasing at an alarming rate in all races, sexes, ages, social groups, and geographic areas since 1957. It is reported that physicians who have not observed a single case of infectious syphilis in 20 years are suddenly finding it among their patients.

To alleviate this situation partially and to serve a pressing need, the Venereal Disease Program of the Public Health Service routinely abstracts current articles on venereal diseases from almost 1,000 journals, both domestic and foreign. A publication entitled "Current Literature on Venereal Disease," including these abstracts, is printed three or four times a year and indexed annually. It is distributed free to physicians.

If you wish to receive this publication regularly, please write to Dr. William J. Brown, Chief, Venereal Disease Branch, Communicable Disease Center, Atlanta 22, Georgia.

THE WEST VIRGINIA STORY

Labor leaders, administration officials, and other proponents of medical care of the aged under the social security system are constantly trying to sabotage and discredit the Kerr-Mills Act.

When it appeared that the Kerr-Mills program was having financial difficulties in West Virginia, those pushing for the social security approach were quick in attempting to make "political hay" out of the situation.

Through an adverse national publicity campaign, they were able to give the general public the impression that the federal-state matching grant program for health care of the needy and near-needy aged in West Virginia had run out of funds.

Welfare Secretary Ribicoff gave impetus to the situation during an interview by indicating that West Virginia was going broke under the Kerr-Mills program.

An investigation of the so-called financial emergency revealed that West Virginia had \$4.3 million to operate its Kerr-Mills program until June 30, 1962. And with a matching federal contribution of \$3.08 million, West Virginia will have \$4,380,000 to operate the aged care program from July, 1962 to July, 1963.

FEDERAL SUPPORT OF MEDICAL RESEARCH

John M. Russell of the Markle Foundation, established in 1927 by the late John Markle of Pennsylvania to promote medical education, believes that the amount of money the government is giving to support the research programs of medical schools is adversely affecting teaching and other functions of schools.

In the Foundation's annual report, Russell compares our medical schools with a motor. The medical school motor, he says, is not hitting on all cylinders and is in need of a tune-up; and Uncle Sam's tinkering is not helping matters very much.

Research, he points out, is only one cylinder in the medical school motor; and medical research itself won't get very far in the future if medical schools are not kept running on all cylinders.

"Because government grants have concentrated so heavily on the encouragement of research, most of the money in the bio-medical field has gone their way. Medical schools, however, have other and equally important jobs to do, such as training, education, and service.

"With grants for research projects, research facilities, research trainees, research equipment, research personnel and for anything in any way, shape or form, as long as they are for research, the 'central function' (which is education) and the 'proper internal balance' (among their major responsibilities) of medical schools have been seriously distorted.

"The overemphasis on research and the consequent distortion of the medical school's function are natural results of the post-war

preoccupation with attempts to solve various dreaded diseases by direct attack. This is the popular approach, which has been reflected in the Congress by larger and larger appropriations.

"The present advisers to Congress often fail to understand the dependence of research on education and the dangers to both when the functions of medical schools are thrown askew."

The report suggests that the ways through which Congressmen get advice on legislation affecting medical education should be broadened. "It may be that this problem can only be dealt with at the university level—that the university presidents, not the medical school deans, are the ones to carry the message to Congress."

KEFAUVER-CELLER BILL

In a speech entitled "The Right of Free Choice," Francis C. Brown, president of Schering Corporation, stated that inroads upon our traditional freedom of choice are being made today within the field of health care in the United States.

The static philosophy of false security and stagnation is attempting to foist itself upon the American people under the guise of "protecting" them in the vital area of health care, he said.

In comparing our health care system to a tripod, Brown said one leg represents the physician, one the pharmacist, and one the pharmaceutical manufacturer. If one leg is destroyed or weakened, the entire structure will topple. If the needs of the people are to be served as well in the future as they have been in the past, each leg of the tripod must remain strong, he added.

Today, he continued, an attempt is being made to force physicians into the beginnings of a system of state medicine. This is the first inroad upon the profession's traditional dignity and independence.

And, for several years, the pharmaceutical industry has been under political attack,

which has misrepresented the industry's past performances and has sought to undermine its true role in a free economy, he said.

Many of the more important aspects of these attacks are embodied in the Kefauver-Celler Bill, S1552, now before Congress. The provisions of the bill are basically so injurious that, were they to become law, they would devastate our existing system of health care.

Mr. Brown goes on to say that the bill would seriously affect the practice of the nation's physicians by setting up a government agency—possibly advised by a committee—which would have the power for patent purposes to decide which new drug is better, or more efficacious. If this agency should happen to think that a new drug is no better than one now available, the new drug probably would not be made or sold. It could not be patented, however useful it might be—this notwithstanding that it is almost impossible to determine the real place of a drug in medicine until it has been widely used.

But, traditionally, the doctor has enjoyed complete freedom of choice in the complex area of internal medicine. Since he makes the diagnosis, it follows that he must be free to select the drug which in his judgement will aid the patient. He must act not only on the basis of the clinical experiences of others, but he must gradually develop his own experience with each new drug. He must be able to prescribe according to the needs of the particular patient, whose whole medical history must be taken into account. How can he perform his functions if he is not to have free access to a wide choice of new drugs?

The entire history of medicine is one of trial and error, based upon free choice. Time and time again, medical history has shown how wrong the experts have been. Many of the experts of the time thought Lister's theory of antisepsis was poppycock, and many also opposed Pasteur's germ theory, he said.

"I need go no further to show the dangers of giving a group—any group—the final

power to stop the use of a drug that is safe, and that does what its manufacturer claims.

"There is only one way—I repeat—there is only one way to establish comparative efficacy for a drug, and that is to let the physician decide which drug is best for his patient. History proves that the only sure test of a drug is trial-by-use.

"Obviously, such freedom of choice in medicine imposes the burden of knowing the difference between drugs and of remembering their identifying names.

"If use by individual physicians is stopped by government experts, who subsequently may be proven wrong, as often happens in science, then the public will suffer and the advance of medical science will be impeded.

"At present, the Federal Food and Drug Administration has full authority to insist that a drug do what its maker claims. In actual practice, the Food and Drug Administration will not make effective an application to sell a new drug unless it is safe and unless the manufacturer's claims are substantiated by reports from reputable medical investigators. The drug industry wholeheartedly agrees with this. Moreover, reports must be based on carefully controlled studies; those based on clinical impressions are no longer acceptable.

"Then what is the real reason for these new limitations proposed by the Kefauver-Celler bill? The ultimate intention must be further to restrict freedom of choice by denying the medical profession access to new drugs, unless some scientific government agency, czar, or committee decided not only that the new drugs are good but that they are comparatively better than those already on the market. Because of the usual government tendency to 'stretch' powers, this new power may ultimately be extended administratively, to deciding whether the mode of action of the new drug is 'preferred therapy' over existing means of treatment.

"To remove this choice from the doctor will be to turn the clock back in the field of medical care."

A. M. A. MEETING

"Medicine in the Atomic Age" will be the theme of the scientific program for the 111th annual meeting of the American Medical Association in Chicago on June 24-28.

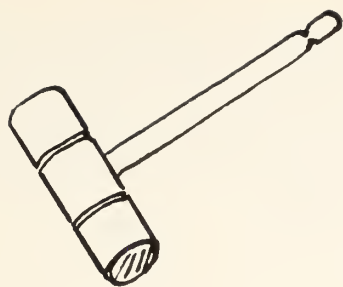
Eminent physicians and research scientists from throughout the nation will present symposiums on inhalation therapy, clinical cardiology and anticoagulant therapy, diagnostic problems and exfoliative cytologic methods, tissue transplantation, inflammatory and ulcerative diseases of the small intestine, teenagers' problems, mental health, and nuclear medicine.

The session on inhalation therapy will be sponsored jointly by the American College of Chest Physicians with Dr. Kenneth K. Keown of the University of Missouri Medical Center, Columbia, serving as co-ordinating secretary. The participating sections are anesthesiology, diseases of the chest, pathology and physiology, general practice, and general surgery.

The American Heart Association will be co-sponsor of the general meeting on clinical cardiology and anticoagulant therapy. Drs. Wright R. Adams of Chicago and Samuel P. Martin of the University of Florida School of Medicine at Gainesville are the co-ordinating secretaries. Participating sections are internal medicine, experimental medicine and therapeutics, diseases of the chest, pediatrics, general practice, preventive medicine, orthopedic surgery, and pathology and physiology.

Co-ordinating secretaries for the general session on diagnostic problems and exfoliative cytologic methods are Drs. Lemuel G. McGee of Wilmington and G. Gordon McHardy of New Orleans. Participating sections are preventive medicine, gastroenterology and proctology, obstetrics and gynecology, pathology and physiology, and general surgery.

The meeting on tissue transplantation is co-ordinated by Dr. John C. Wilson of Los Angeles. Participating sections are orthopedic surgery, pathology and physiology, general surgery, internal medicine, pediatrics, and experimental medicine and therapeutics



President's Page



Physicians have always shown a readiness to offer their services to the ill, regardless of financial status. In many communities we have tried for decades to secure the facilities and support for needed assistance in their care. It has continually been stressed that the problem is an intimate one for local areas where the personal needs are known and where kindly, understanding management can be accorded. Recent years have not made any change in this need. It has been difficult to secure the local funds which are necessary. Much of this lack has been due to the large amount of tax funds which are impounded by the federal government and removed from the satisfaction of local needs.

In the past few years we have been persistently confronted with certain "demands" rather than "needs." Persons entirely unfamiliar with local conditions in our towns and cities are raising a great hue and cry to the effect that these "demands" must be met by more abstraction of monies to the federal government—these funds to be used by remote control for medical care of certain groups, entirely without the personal interest which we know every sick person needs! Further, these "demands" do not include many people who are occasionally in need of the help of their friends and neighbors in time of unforeseen distress. The vast majority of the physicians in this broad land of ours know that this approach to the problem is entirely wrong.

In spite of this knowledge, however, we are presently confronted with great activity on the part of certain people, who for various reasons of their own, not involving real con-

cern for our needy sick, are pressing for this remote control through some sort of embodiment in the social security set-up. They are perhaps not too concerned with the direct method of attachment thereto. This is our pressing problem. In the very near future all our county societies will be asked to join in a concerted movement to convince many people, and particularly our representatives in the Congress, that this approach to any sort of medical care is unwise, if not indeed destructive to our system of personal service to the sick. The urgency of this united effort is impressed upon you. Please contact by personal interview all the people you can in opposition to King-Anderson Bill now before Congress. The present approach to this problem of medical care is the Kerr-Mills Act which properly places medical care in the hands of our local authorities and physicians. The Ways and Means Committee of the House of Representatives in Washington seems to be in favor of holding in abeyance any new and strange approach until further time has been given to experience under the Kerr-Mills approach. If the committee can be widely encouraged in this stand, as evidenced by letters to them, there is hopeful probability that sober thought, based upon actualities of the case, may prevail, thus leading to the maintenance of proper medical care for all of our people who *need* it.

John W. Simpson, M. D.



ORGANIZATION SECTION

COMMITTEE ON PUBLIC RELATIONS

The Committee on Public Relations held its annual winter meeting at the Whitley Hotel in Montgomery on February 10, day prior to the Second County Medical Officers Conference.

Meeting with Chairman Luther L. Hill, were Drs. J. D. Bush, H. E. Askin, W. L. Smith, John W. Simpson, D. G. Gill, E. B. Kent, N. C. Veale, L. D. McLaughlin, W. E. Lawrence, R. O. Rutland, L. R. Burroughs, and J. Michaelson.

The first order of business was the consideration of awarding plaques to former and future past-presidents of the Association. Following a discussion on the cost of establishing these awards, Dr. Kent was appointed chairman of this project.

The committee then discussed the feasibility of reprinting the State Junior Chamber of Commerce's brochure entitled "Alcoholism." It was the consensus of the committee that this project be turned over to the Interprofessional Relations Subcommittee for consideration and, if they see fit, to investigate the possibility of producing this on a yearly basis.

Dr. Hill advised the committee of the availability of a film on "Cardiac Massage" and asked the committee about the feasibility of purchasing prints of the film for distribution to county medical societies. It was the opinion of the members that this would be a worthwhile project, and they suggested that it be turned over to the Subcommittee on Mass Media for consideration.

Dr. Lawrence, reporting on the activities of the Subcommittee on Mass Media, stated that the Association's relations with the press

were very good and that no additional programs in this area are needed at the present time. He reported that his subcommittee had been actively engaged in the production of a film entitled "A History of Medicine in Alabama" and that they hoped to premiere the film during the 101st Annual Session in Birmingham in April.

In relating the activities of the Subcommittee on Interprofessional Relations, Dr. Rutland outlined the subcommittee's liaison work with Bar, Dental and Pharmaceutical Associations. He also discussed the work that was being done in connection with the Medical Assistants, the functions of the Physician Placement Service and the Public Safety Program. He reported that the Medical Assistants will hold a two-day educational meeting in July. Following his report on the Athletic Injuries Conference, the committee discussed the desirability of continuing the conference. It was the general opinion of the committee that the program was a worthwhile one and that it should be continued for another year.

Dr. Michaelson reported that the Awards Subcommittee had reviewed the nominations for the William Crawford Gorgas Award, the Douglas L. Cannon Medical Reporter Award, and the entries in the essay contest. He stated that the subcommittee recommended that no Gorgas award be given this year. This recommendation was approved by the full committee. He announced that the subcommittee had selected three candidates for the reporter award and the three best essays. The committee accepted the subcommittee's recommendations for these awards. Winners will be announced to the press shortly before the 101st Annual Session in Birmingham.

Dr. Burroughs announced that the Subcommittee on Personal Public Relations had

completed its public opinion survey on "What, if anything, is wrong with the medical profession in Alabama?" and read the following excerpts from letters received.

It seems to me that the greatest weakness of the medical profession is to be found in its failure to enforce ethical standards and conduct within its membership. It is obvious that the public is not sufficiently protected from those few who engage in questionable practice. . . . President, Junior College

If I had any criticism at all, I should think that your Association might improve its public relations by selling the general public on the reasons and justifications for medical fees. As far as I personally am concerned, I have never had a charge for professional services which I thought was out of line. In instances where I have heard such criticism expressed, in my opinion it was in all probability due to lack of understanding of what was entailed. . . . President, Industrial Firm

There are three things that might be a problem. The first is that there might be a better way that doctors could explain the reasons for the amount of their charges instead of just one amount which is usually larger than the patient expected. another point is, especially in extreme cases, many people feel that doctors should be willing to make house calls. Another way that doctors might be able to make a better impression on the general public is for them to find a little more time to participate in activities of a civic nature. So often they do have good reasons for not doing so. However, I definitely feel that this could be improved upon. . . . President, a local Chamber of Commerce

I know of only one criticism to offer, and this criticism does not represent my own personal experience, except perhaps in one instance. Many persons of my acquaintance have, however, at one time or another had the experience to which I now refer. As for the criticism, apparently many physicians are not careful enough to explain to the patient and to the members of his family the nature and course of the illness. This failure to so do often brings on considerable anxiety and fears that could in many instances be allayed if those persons involved were informed in language which they could understand. I am fully cognizant of the fact that there would also be times when those persons involved would experience greater fears and anxiety. . . . President, Junior College

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The fall meeting of the Committee on Medical Education and Hospitals was held in Montgomery and was devoted to recruitment of medical students and nurses.

Dr. Berson, dean of the Medical College of Alabama, distributed a list of the scholarships and loans that are available to Alabama students and stated that the lack of funds was not the only problem in recruiting medical students. An adequate supply of financial assistance would alleviate only the economic problem, he said. Dr. Berson pointed out that medicine faces the problem of competing with engineering and other fields for the better students. This, he said, is the reason why there are more students in universities today studying for Ph.D.'s than for M. D. degrees.

Dr. Rutland gave a report on the "Career Day" program at the Medical College of Alabama and suggested that the program be continued as a means of interesting students in medicine.

He stated that better liaison with counselors for pre-medical students at Alabama and Auburn Universities should be fostered and that county medical societies should develop a system of contacting and interesting high school students in medicine.

Upon Dr. Rutland's suggestion, the committee appointed two members in each vice-presidential district to meet with all high school counselors in their area in order to stimulate more interest in recruiting. A report on the results of these meetings will be given at the next committee meeting.

Dr. Rutland also urged the committee to work with county medical societies in establishing "Hospital Days" for high school students in the larger cities. This would give them a first-hand knowledge of what medicine is and of what science offers the prospective medical students.

In discussing recruitment of nurses, Dr. Berson stated that there is an acute shortage of nurses in Alabama today. He said Alabama needs to increase the number of graduates annually in order to increase its present

number of graduates of 485 to the 1800 needed yearly.

The Committee on Mental Hygiene met at the Tutwiler Hotel in Birmingham on October 12 for the purpose of discussing any current mental hygiene problems and of making recommendations on the committee's annual report to the Association.

It was brought out that there are several programs dealing with mental health within the state and that at times these programs represent to some degree both a duplication and a conflict. It was the opinion of the committee that a closer liaison should be established between State Hospitals, the University, and the State Department of Health.

In discussing the present status of psychiatric care at Kilby Prison, Dr. J. S. Tarwater reported that Kilby Prison has a Sanity Commission which screens mental patients. If the Commission feels that the patient is in need of psychiatric care, he is then admitted to Bryce Hospital by the Governor of the State. Dr. Tarwater stated that he has an estimated 50 to 75 admissions each year from Kilby. The committee agreed that when the prison system of Alabama is reorganized, adequate consideration should be given to psychiatric prisoners and that this treatment should be made a part of the prison system on the main grounds.

RURAL HEALTH COUNCIL

The establishment of driver training and home nursing programs were the main topics of discussion at a recent meeting of the Rural Health Council of Alabama in Sylacauga.

The meeting was attended by representatives of the Extension Division and the Home Demonstration Division of Auburn University, Alabama Farm Bureau, State Health Department, Medical Association and its Auxiliary.

Dr. Donald, chairman of the council, announced that federal money was now available to the State Department of Health for

establishing home nursing programs for the chronically ill, and that a pilot program had been augmented in the counties of Clay, Winston, Lamar, Sumter, Choctaw, Marengo, Crenshaw, and Henry. He said that the county board in all these counties had adopted the program. He pointed out that this educational program is free to all and concerns nursing guidance and nursing education.

Following this discussion, an open forum on driver training education was held. Mrs. Coleman reported that Lee County had a driver training program under its county educational system. This four-hour a day program, she said, was taught by a local policeman. The county school board pays the driver's salary, and local automobile dealers supply the cars on a rotating basis. The students pay a fee of \$5 for the upkeep of the car and its insurance.

Mrs. Cunningham reported that Shades Valley High School in Birmingham had discontinued its driver training program two years ago because of complaints from parents. According to the high school principal, the course was a good one and should be re-established during the summer months.

Senator Givhan questioned the practicality of holding the course in the summer because too many would miss out on it, especially those in the rural areas. He suggested that casualty insurance companies be asked to support and assist in the program.

The council decided to ask representatives of casualty insurance companies to meet with the council in order to work out a joint sponsorship of driver training programs for high school students.

Dr. Nickerson suggested that a progress report on driver training education should be published in P. R. Notes from time to time. He asked those present to contact the various organizations in their communities about supporting a driver training program in order to foster favorable public opinion for this phase of education.



ASSOCIATION FORUM

MD Tax Break Due In More States

Local Action May Soon Increase Number of Laws Giving Physicians the Tax Advantage of a Corporation. But the AMA Warns Not All Doctors Can Qualify Under Federal Rules

The states are finally giving doctors the tax break Washington has promised—but failed to deliver—for more than a decade.

Thirteen states already have laws that allow doctors who meet certain qualifications to be taxed like corporations. And tax men are predicting that so long as passage of the Keogh bill remains in doubt, other states will waste no time in enacting similar legislation.

"Twenty-two state legislatures are meeting in 1962," says one legal expert. "This means a big push to get more corporation or association laws on the books as quickly as possible. Maybe the first break this year will come in California or Colorado. Maybe in New York or Kentucky or Virginia. It's hard to tell which state will be next on the bandwagon."

The new laws, like those already in effect, will conform to the now famous Kintner decision of 1954. They will suggest that the members of any professional corporation or association—medical or otherwise—can get the kind of tax advantages only corporation employees have enjoyed in the past. They

will turn the professional into an "employee," fully qualifying him—at least in theory—for a favorable tax ruling from the Internal Revenue Service.

This means group life and health insurance programs. It means group pension plans and social security coverage. But it can also mean an uphill fight with the revenue service. And if a fight develops, a good deal may hinge on whether a professional group is set up as a corporation or an association.

The AMA is warning of a "common misconception" about the viability of the states' association laws. The mere fact that such laws have been passed, it emphasizes, "doesn't automatically guarantee physicians that they will get the benefits they are looking for."

Says Warren E. Whyte of the AMA law department: "It's possible that in time the IRS will be forced to recognize groups organized under the various medical and professional corporation statutes. But when it comes to the associations, particularly the smaller ones, I'd say there's some question

as to whether they can or will measure up to the IRS criteria."

These criteria were first announced in 1960—but only as "proposals" that may yet be subject to modification.

In order to provide "employee" benefits for its members, any medical corporation or association must first of all be organized for the express purpose of showing a profit. Then, says the IRS, it must possess four other characteristics that, taken together, indicate the group may qualify for corporation-like tax treatment:

It must have continuity of life. This means that if a member dies, retires or resigns, the group as a whole will keep on "living" just as a corporation continues if a stockholder sells out.

It must have centralized management. One person, or one committee, must have the right to make management decisions for the entire group.

It must have transferability of interests. Each member must be free to sell his interest in the organization to any physician he chooses.

It must have limited liability. No member may be held liable, in excess of his investment, for debts or claims against the group. Thus, maximum liability is limited to the value of the property held by the association or corporation.

Under association and corporation statutes, contributions to pension and profit-sharing plans aren't considered to be a part of taxable income; they're deducted automatically by the professional organization, and all investment earnings are considered tax exempt.

The individual physician pays taxes on his share of the benefits only when he gets the actual cash—usually following his retirement. If he takes the money in a lump sum, it is taxed at the low (maximum of 25 per cent) capital gains rate.

Proponents of the association-corporation idea list these other advantages available to doctor-members:

- Group life and health insurance. The group pays the premiums and gets a tax deduction for doing so. As with pension and profit-sharing plans, the money isn't considered a part of taxable income.

- Sick-pay benefits. If a physician is unable to work because of sickness or injury, benefits paid to him up to \$100 a week are tax free.

- Death benefits. If a member dies, up to \$5,000 can be paid to his widow tax free and the group gets a tax deduction for the amount.

- Social security coverage.

As new association and corporation laws go into effect, doctors who want to take advantage of them must submit specified documents to the district director of internal revenue with whom they file their income tax returns. And they must file a brief giving their reasons for thinking they can qualify for corporate tax treatment.

The possibility of lengthy wrangling with the IRS may give some doctors second thoughts about setting up associations or corporations as the state laws allow. But the AMA thinks one consideration alone should encourage MDs to go slow, no matter what some state legislatures may do:

"Don't count out the Keogh bill in '62," says the AMA's Whyte. "I know it's been introduced in every session of Congress since 1951 and that it's never yet gotten beyond the House Ways and Means Committee. But it just may get through this year and allow self-employed doctors to set aside a maximum of \$2,500 a year for retirement."

Mr. Whyte explains just how this affects action at the state level: "If the Keogh bill becomes a federal law, it will be effective in all 50 states, of course. This will mean that doctors covered by pension plans set up under any of these state laws will be out in the cold. The Keogh bill will permit individuals to establish tax-favored pension plans *only* if they have no prior coverage under an existing retirement program."

Reprinted from Medical World News.

Then Go Ahead

THURMAN SENSING

Nashville, Tennessee

We had a Congressman from Tennessee back in the early days of the nation who was quite unlettered but who had lots of common sense. Among the things for which he is best remembered is his statement, "Be sure you're right, then go ahead."

David Crockett's advice is good for an individual. It was especially good for a young nation feeling its way in the world—a new nation with a new government based on the philosophy of freedom and incentive to the individual.

And the fact that this nation has matured and reached a position of preeminence among the nations of the world since Crockett's time does not lessen the value of his advice. Truth has not changed in the intervening years; freedom is just the same.

The sad fact of the matter is, however, that now we have grown rich and powerful many of our actions seem to be based on fear rather than on courage. This is wrong. We did not act that way when we were a young nation along the Atlantic seaboard and perhaps had some reason to be fearful. This nation was not built by men of that type.

As for me, I am getting sick and tired of hearing some of our globetrotters who talk a lot tell us that we are "losing face" in certain parts of the world, that we are losing prestige among certain peoples of the world, that we must do certain things and change our ways or other peoples in the world won't think as much of us as was formerly the case.

What has become of our ideals and principles and self-reliance? When we once make up our minds we "are right", we should "then go ahead." Otherwise, we have no minds of our own; we are no longer the free and independent nation that our forefathers underwrote with "their property, their lives, and their sacred honor."

It is true, of course, that when a nation gains a position of leadership in the world, it has the responsibility that must go with leadership. But leadership among the nations of the world does not mean that we must guide our conduct according to the thinking of these other nations. Neither does it mean that we must make over these other nations into our own image.

It does mean—certainly from the standpoint of the underlying philosophy of our form of government here in the United States—that we should vigorously continue to set the nations and peoples of the world an example of what can be accomplished by a free people in a free nation. Then, if these other nations and peoples would like to emulate our accomplishments, they can go and do likewise; if they are not interested, that is their privilege.

It would not be amiss to mention some practical applications.

A few years ago we heard that the nations of Western Europe were much disturbed with us because we allowed to exist in this country that which had become known as "McCarthyism." Now, maybe "McCarthyism" should have been stamped out; maybe it shouldn't. But whether it should or should not was something for us to decide—not the peoples of other nations.

Today some of our political leaders are saying we should adopt a strong civil rights program because it would keep Soviet Premier Nikita Khrushchev from "pointing his finger at us" on this score, would deny him the use of the race issue as a propaganda vehicle. Here again, maybe the civil rights program they propose should be adopted, maybe it shouldn't. But whether it should or should not is something for us to decide—not Mr. Khrushchev.

Reprinted from Bulletin of Southern States Industrial Council.



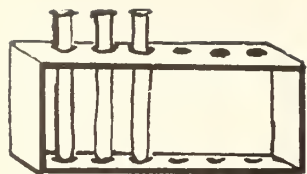
Around The State



The Alabama Division of the International College of Surgeons, Alabama Academy of General Practice and Pfizer Laboratories will sponsor a two-day meeting at the Tutwiler Hotel in Birmingham on March 28-29. Among the distinguished physicians who will appear on the program are Drs. Claude J. Hunt, Kansas City, Missouri; Curtice Rosser, Dallas, Texas; Edward L. Compere, Chicago, Illinois; Neal Owens, New Orleans, Louisiana; Luther L. Terry, Washington, D. C.; Henry P. Leis, Jr., New York City; Warner F. Bowers, New York City; Tom Manchester, Atlanta, Georgia; Lawrence W. Long, Jackson, Mississippi; Jack Wickstrom, New Orleans, Louisiana; Chester W. White, Birmingham; Alexander Brunschwig, New York City; and D. G. Gill, Montgomery.







STATE DEPARTMENT OF HEALTH

ERADICATION OF SYPHILIS—TASK FORCE REPORT

In the Federal fiscal year 1961, 18,781 cases of infectious syphilis were reported to health authorities in this country. This was the second consecutive year in which an increase of over 50 per cent was reported. Since 1957, there has been a three-fold increase; and in the first six months of the current fiscal year, that is from July 1-December 31, 1961, more than 10,200 cases have been reported. Not since 1950 have primary and secondary syphilis cases been reported in this magnitude.

Last spring the House Appropriations Committee in its report on the venereal disease appropriation said: "Syphilis is easily detected, and in the early stages treatment is successful and not difficult. This is a disease that ought to be eliminated in the United States. . . . The Committee will expect the Public Health Service to have recommendations for an effective program when hearings are held next year."

As a result, acting on the recommendation of the Public Health Service Advisory Committee on Venereal Disease Control, the Surgeon General appointed a Task Force under the chairmanship of Dr. Leona Baumgartner, New York City Health Commissioner. Other members of the Task Force were Dr. Arthur Curtis, Professor and Chairman, Department of Dermatology, College of Medicine, University of Michigan; Dr. A. L. Gray, Executive Officer, Mississippi State Board of Health; Benno E. Kuechle, Vice President, Employers Mutual of Wausau; and T. Lefoy Richman, Projects Coordinator, National Commission on Community Health Services. Dr. Terry asked the Committee to review the syphilis problem and the control programs designed to combat it and to recommend a course of action which would lead to the eradication of syphilis as a public health problem.

The final report of the Task Force has just been released. The group found the following items particularly disturbing:

1. Evidence of a chain reaction in the spread of syphilis infection, especially among teenagers.
2. Evidence that the actual number of cases occurring far outnumber the cases reported.
3. Evidence that effective techniques of control and therapy to stop the spread of syphilis are available but not applied widely enough.
4. Evidence that unless a vigorous stepped-up program is inaugurated now, the increased spread of syphilis currently being observed may be accelerated.

Setting a six-point, ten-year goal for the elimination of syphilis as a public health hazard, the Task Force called for the following measures to achieve this goal:

An intensive national effort providing for at least two visits a year by a qualified health worker to the country's 100,000 general practitioners and one visit per year to the remaining 130,000 physicians.

Establishment of a program to insure that all blood processing laboratories report to health departments all positive specimens by name of patient.

Intensification and extension of current interview-investigation services to cover all infectious syphilis cases.

Development of a comprehensive and dynamic education program for professional workers and the general public.

Continuation of research in syphilis immunology, therapy, and laboratory procedure together with greater expansion of research in adolescent and young adult sex behavior.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1962

	Dec.	Jan.	*E. E. Jan.
Tuberculosis	119	87	142
Syphilis	108	103	120
Gonorrhea	325	294	323
Chancroid	0	3	3
Typhoid fever	3	1	2
Undulant fever	2	0	0
Amebic dysentery	5	2	1
Scarlet fever and strep. throat	80	162	114
Diphtheria	5	0	7
Whooping cough	2	3	21
Meningitis	5	4	12
Tularemia	0	1	1
Tetanus	0	1	2
Poliomyelitis	1	0	1
Encephalitis	0	1	2
Smallpox	0	0	0
Measles	133	564	213
Chickenpox	37	85	174
Mumps	19	81	141
Infectious hepatitis	142	142	35
Typhus fever	0	1	0
Malaria	0	0	0
Cancer	606	700	469
Pellagra	1	0	0
Rheumatic fever	13	19	10
Rheumatic heart	31	26	20
Influenza	111	507	1,486
Pneumonia	205	310	346
Rabies—Human cases	0	0	0
—Pos. animal heads	2	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

* * *

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director
SPECIMENS EXAMINED

January 1962

Examinations for malaria	1
Examinations for diphtheria bacilli and Vincent's	147
Agglutination tests	461
Typhoid cultures (blood, feces, and urine)	358
Brucella cultures	0
Examinations for intestinal parasites	2,221
Darkfield examinations	4
Serologic tests for syphilis (blood and spinal fluid)	22,842
Examinations for gonococci	1,651
Complement fixation tests	83
Examinations for tubercle bacilli	3,677
Examinations for Negri bodies (smears and animal inoculations)	146
Water examinations	2,114
Milk and dairy products examinations	4,027
Miscellaneous examinations	4,169
Total	41,901

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

BIRTH AND DEATH STATISTICS FOR
DECEMBER 1961 AND COMPARATIVE DATA

Live Births Deaths Causes of Death	Number Registered During December 1961			Rates* (Annual Basis)		
	Total	White	Non-White	1961	1960	1959
Live Births	6,824	4,236	2,588	24.3	25.1	26.3
Deaths	2,899	1,848	1,051	10.3	9.7	10.2
Fetal Deaths	131	62	69	18.8	21.9	21.8
Infant Deaths—						
under one month	150	69	81	22.0	17.5	21.8
under one year	251	105	146	36.8	35.8	36.7
Maternal Deaths	7	1	6	10.1	9.8	5.4
Causes of Death						
Tuberculosis, 001-019	34	18	16	12.1	8.7	9.1
Syphilis, 020-029	4	1	3	1.4	0.4	1.5
Dysentery, 045-048					0.4	0.4
Diphtheria, 055						0.4
Whooping cough, 056	2	1	1	0.7	0.4	0.4
Meningococcal infections, 057	3	2	1	1.1	1.1	1.5
Poliomyelitis, 080, 081						
Measles, 085	2	1	1	0.7	0.4	
Malignant neoplasms, 140-205	350	265	85	124.7	118.0	124.1
Diabetes mellitus, 260	42	26	16	15.0	10.1	18.3
Pellagra, 281					0.4	
Vascular lesions of central nervous system, 330-334	386	243	143	137.5	125.9	145.7
Rheumatic fever, 400-402	3	3		1.1		1.1
Diseases of the heart, 410-443	1,023	687	336	364.4	325.5	350.5
Hypertension with heart disease, 440-443	27	9	18	9.6	57.4	67.5
Diseases of the arteries, 450-456	79	52	27	28.1	28.1	21.9
Influenza, 480-483	10	6	4	3.6	5.4	4.7
Pneumonia, all forms, 490-493	79	44	35	28.1	37.5	36.9
Bronchitis, 500-502	9	9		3.2	2.5	2.2
Appendicitis, 550-553	2		2	0.7		1.1
Intestinal obstruction and hernia, 560, 561, 570	15	12	3	5.3	5.4	6.2
Gastro-enteritis and colitis, under 2, 571.0, 764	10	1	9	3.6	8.3	5.1
Cirrhosis of liver, 581	15	9	6	5.3	7.2	6.6
Diseases of pregnancy and childbirth, 640-689	7	1	6	10.1	9.8	5.4
Congenital malformations, 750-759	31	25	6	4.5	5.5	4.0
Immaturity at birth, 774-776	45	13	32	6.6	3.7	7.2
Accidents, total, 800-962	196	133	63	69.8	70.7	61.7
Motor vehicle accidents, 810-835, 960	86	67	19	30.6	30.7	27.7
All other defined causes	415	246	169	147.8	140.0	144.9
Ill-defined and unknown causes, 780-793, 795	137	50	87	48.8	51.2	46.4

*Rates: Birth and death—per 1,000 population
 Infant deaths—per 1,000 live births
 Fetal deaths—per 1,000 deliveries
 Maternal deaths—per 10,000 deliveries
 Deaths from specified causes—per 100,000 population



BOOK REVIEWS

Management Of Fractures, Dislocations, and Sprains. By H. Earle Conwell, M. D., Associate Professor of Orthopedic Surgery, Medical College of Alabama, and Fred C. Reynolds, M. D., Professor of Orthopedic Surgery, Washington University School of Medicine. Cloth. Price, \$27.00. Pp. 1153, with 1227 illustrations. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis, Missouri, 1961.

Alabamians have a tendency to take their famous sons casually. It seems appropriate on reviewing this essentially Southern book to comment on its erudite tradition. H. Earle Conwell, the senior author, was born and raised in Walker County. He received his initial medical school training at the University of Alabama and subsequently spent two years with Sir Robert Jones, the distinguished British Orthopedic Surgeon during World War I. On his return from the war he became associated with the Employee's Hospital at Fairfield, Alabama, where Dr. Lloyd Noland was assembling his famous medical service for the Tennessee Company. The flowering of the great surgical tradition of Lloyd Noland has affected all our professional lives in this state whether we trained directly or were influenced in a second or even third hand manner. H. Earle Conwell was greatly inspired by the high standards of general patient care of trauma inspired by Lloyd Noland and has managed to incorporate many of these principles in this recent seventh edition.

Fred C. Reynolds in a meteoric rise to professor of orthopedic surgery at the Washington University Medical School brings an editorial experience of the first order. He is, in addition, the editor of the proceedings of the American Academy of Orthopedic Surgery, the leading instructional course text for orthopedic surgery in the United States.

The pleasing eight by ten volume is bound in dark red fabroid with gold lettering on a black background. The title is discretely lettered on 70 pound Letterpress Enamel. The text type is 10 pt. Garamond family type face. The illustrations are lavishly used to illustrate the editorial points. The use of proprietary commercial illustrations has been criticized sometimes in medical books, but we believe it necessary in this type of text to tell where to get certain fracture impedimenta so necessary for immediate use. We believe the use of colored patients for illustration on the white paper gives a clearer view of gross injury, pathology, and methodology. We would like an increased use of the quality line drawings which supplement the X-rays and photographs. The text has always been slanted towards conservative management of musculo-skeletal injuries. It has managed to avoid complicated methods. Mention of these complicated methods is appropriately made, however, as for example the use of Haynes and Stader together with Rush pins for use in complicated Colles fractures. A medical student and house officer at his first attempt will find help at every turn in this text and will, if he reads carefully, find mentioned all the subtleties of the art. The classic content of this volume is found at every turn and reflects the active part which H. Earle Conwell and J. Albert Key wove into its fabric during that 40 years of heaviest involvement in the active rise of orthopedic surgery in the United States. The book is divided into two great parts:

- I. Principles and General Aspects.
- II. Diagnosis and treatment of specific injuries.

Part I. initially shows very adequate illustrations of simple splints for initial treatment of fractures and other extremity injuries. Following this the principles of fracture immobilization, bone healing, prove helpful to all house officers. That

portion by Dr. Robert B. Dodd on anesthesiology in extremity injuries is much needed innovation in fracture books and points toward more adequate care in trauma. We are glad to see included the specific chapters on pathologic fractures, complications of fractures, and open fractures and war wounds. The inclusion of James Bennett Brown and Minot P. Fryer's chapter on face and neck injuries follows accepted principles and manages to encompass this large field. Soft tissue and bony injuries of the hand are rightfully all included together under a separate chapter by Arthur H. Stein. We like the anatomic illustrations which are remarkably clear. The illustrations on hand and finger splints answer questions frequently raised in the care of the injured hand. We are in minor disagreement in immobilization in acute flexion of the little finger in the fractures of the metacarpal neck. The completeness of this chapter is illustrated by the section on thorn and wringer injuries and other minor infections. We would like the authors to consider sections on human and animal bites in future editions. The use of some mnemonic line drawings to illustrate clinical points should likewise be considered.

The incorporation of many of the principles of the late Arthur G. Davis in injuries of the spine is illustrative of the widest editorial use of selected acceptable literature which has been incorporated in the Seventh edition of this text. Fair and complete review of so-called whip lash injuries with the admonition to overtreatment is a helpful attitude which many of our practitioners might more profitably follow. Injuries about the shoulder girdle and shoulder itself have placed a justifiably large emphasis on closed methods, and we were elated to see only twelve lines devoted to open reduction of the clavicle. There is nothing in the Conwell abduction frame that cannot be purchased at a local lumber yard and hardware store. This apparatus has the greatest practical use for fractures of the upper extremities.

We were pleased to see the many warnings and cautions about manipulation of the shoulder and trust this procedure is headed for the same oblivion as the Murphy Drip. Fractures of the shaft of the humerus continue to carry the predominantly conservative methods of this text. The chapter on injuries about the elbow joint covers this large section with answers for all critical questions of diagnosis and treatment. The heritage of physical diagnosis which the text has followed since 1934 is nowhere better illustrated than in this chapter. Here in injuries about the elbow mnemonic drawings to supplement the clinical illustrations and X-ray might clarify the complicated X-ray appearance of epiphysis about the elbow.

We have always been somewhat cautious about the application of volar splints to the forearm but have observed others in this application of board splints to the volar surface of the forearm without circulatory trouble. The serious and increasing sequellae of post-operative bone infection makes

a must of the advice of the authors to try a closed reduction first.

The senior author in clinical practice is at his best in closed manipulation of Colles fractures. Complete coverage of all elements of this subject is improved with each edition.

The detailed instructions and illustrations on the use of skeletal traction for femoral shaft fractures are in complete agreement with the best practice. The authors seem to have struck a happy union between conservative and operative treatment.

Injuries about the knee joint include the classic section on complete discoloration of the knee which is a standard for all articles written since. The chapter on fractures of the shaft of the tibia and fibula is most complete and offers types of treatment needed in every situation. Once again this reviewer has observed the senior author in clinical application of cross pin fixation for displaced tibia and fibula fractures with excellent results and without infection, nerve or vascular injury.

The last two chapters on injuries in the region of the ankle joint and foot present very adequate and complete methods of diagnosis and treatment.

The index appears adequate and complete for cross reference and the table of contents is well arranged for reference.

David G. Vesely, M. D.

Epidemic! By Frank G. Slaughter, M. D. Cloth. Price, \$3.95. Pp. 286. Doubleday & Co., Inc., 575 Madison Avenue, New York 22, N. Y., 1961.

This book is a novel and written specifically for a non-medical public. It is highly probable that medical readers would find the detailed explanation of medical subjects in laymen's terms a bit tiring. The non-medical public, however, seems to enjoy peeping behind the scenes in the field of medicine.

This reviewer is a fan of Dr. Slaughter's and usually finds his plots tightly woven and presented in a manner that will hold the reader's interest. Although *Epidemic* is not considered by this reader to be one of Dr. Slaughter's better novels, *Epidemic* does serve the purpose of making a person stop and think. While reading the novel, one gets the idea that it cannot happen here; but then one begins to think that it could. Therein lies the value of the book.

The time of the novel is 1965, and the scene is New York City. The author concerns himself with two epidemics, one of the plague and the other of sabotage handled by foreign agents. Superimposed on these two epidemics are situations and social mores of the present day extended to that period in the near future. Perhaps better medical novels have been written, and perhaps better works con-

cerning espionage have been written. The comingling of the two, however, both of which are superimposed on a modern day setting, makes for interesting reading.

W. A. Dozier, Jr.

Memoirs of a Medico. By Dr. E. Martinez Alonso. Cloth. Price, \$4.50. Pp. 335. Doubleday and Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1961.

It has been said that truth is stranger than fiction. In the case of Dr. Alonso's book, this might be paraphrased to read "actual experiences related by a good author are far more interesting than fiction." The author has prepared an easily read and interesting group of incidents taken from his varied career. Although the book points up from time to time certain differences between the practice of medicine in Spain and in the United States, the most interesting chapters to this reader were those dealing with the Spanish Civil War.

To a reader on this side of the Atlantic there is perhaps one aspect of the presentation that could have been strengthened. Although the author gives some insights into his philosophy of the practice of medicine, these are somewhat sketchy and seem to be replaced by a selection of incidents that sometimes seem bizarre and without relief. Even so, this is not a glaring defect to a casual reader.

This book is recommended to anyone who enjoys this type of light reading. It will definitely lift you out of your own everyday situation and leave you refreshed with another man's experiences.

W. A. Dozier, Jr.

The Gentle Legions. By Richard Carter. Cloth. Price, \$4.50. Pp. 335. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1961.

The title of the book is derived from those millions of American housewives who devote their spare time to the national health groups. Mr. Carter not only gives an analysis of the large groups, such as the American Red Cross, the National Foundation, the National Tuberculosis Association, the American Heart Association, and the American Cancer Society, but also gives much information on many of the smaller groups which raise less money each year. The book includes historical background of the large organizations; information on how the various groups function, what their goals are, and how they are organized; and information on the major personalities who were influential in the building of these groups. Also a good portion of the volume is devoted to a discussion of the struggle between local United Funds and national health organizations.

In his acknowledgements the author states, "Had the conclusions turned out to be innocuous I would now thank many of those men and women by name. But the conclusions are controversial (that is, at odds with what usually gets published about national health agencies), and it would be unfair for me to saddle anyone else with even indirect responsibility for them."

This reader, who certainly is not fully conversant with many items discussed in the book, does not feel that there are too many things with which one would find fault; and most of those would grow out of implications rather than flat statements. Whether one agrees or disagrees with all of the arguments set forth or all of the conclusions reached by Mr. Carter, it is a book well worth having and one that causes the reader to think—often with new light shed on the subject.

The book is recommended to the members of the medical profession as well as to partisans and nonpartisans in the voluntary health movement in America today.

W. A. Dozier, Jr.

The Reluctant Surgeon: A Biography of John Hunter. By John Kobler. Cloth. Price, \$4.95. Pp. 359. Doubleday and Co., Inc., 575 Madison Avenue, New York 22, 1960.

This well written, easily read biography of John Hunter is a most interesting presentation of not only the life of the medical genius but also the social environment in which he lived. Mr. Kobler in his preface states, "Hunter has not fared well at the hands of his biographers. The early portraits were flawed by either idolatry or hatred; the more recent have been sketchy, specialized, or overformal. . . . This book is an effort to reclaim the scientist from the archives and the man from the shadows." This indicates that Mr. Kobler's aim is directed more toward the non-medical reader than toward the medical profession. At the same time, one wonders if Hunter's leadership in so many fields is fully realized by the men who devote their lives to medicine and science. As pointed out by the biographer, John Hunter's work in surgery and neurology has only been fully appreciated in recent decades.

If for no other reason, John Hunter should be very important to American physicians because of his effect upon the development of medicine and surgery in this country. Hunter was a teacher and listed among his students John Morgan, who established the first medical school in this country, and Philip Syng Physick, the father of American surgery.

This interesting biography is one from which enjoyment can be derived and one which has a place in the library of medical men.

W. A. Dozier, Jr.

The Woman's Auxiliary



The Northeast District meeting was held in Oneonta on November 15. Mrs. William R. Sutton presided at the luncheon, calling on each state officer and county president for a short report. Special guest was Carolyn Hollis, a senior from Pennington High School, Blountsville, and state treasurer of the Alabama Association of Future Nurse Clubs. Speakers for this meeting were Mrs. William G. Thuss, Sr. and Dr. Ira Patton.

The Southwest District meeting was held in Point Clear at the Grand Hotel on October 11. Through the hard work and enthusiasm of Mrs. Curtis A. Smith, 70 members attended. I had the honor of addressing this group and introducing our guest speaker, Mrs. William G. Thuss, Sr. We are all extremely grateful to Louise for taking time out of her busy life to be with her own Alabama girls whenever it is possible for her to do so. Auxiliary members modeled hats, all decorated to depict the duties of various chairmen in the Auxiliary. Afterwards a film was shown on "Speaking up for Medicine."

Mrs. Seaburt Goodman, State AMEF Chairman, and Mrs. James Morgan, Jr. reported AMEF funds to date: \$3,570.40. Our quota for the Auxiliary is five dollars per member. Mimi's slogan is "Going over the Goal in '62."

Tuscaloosa County reports a new Health Careers Club consisting of more than 50 boys and girls. Programs on safety, civil defense, and mental health have been presented to various organizations by Auxiliary members.

Through the efforts of officers and committee chairmen in the Woman's Medical Auxiliary we have concentrated on good fellowship and friendly relations among physicians' families this year. At the same time we have tried to bring to our members the true meaning of the Auxiliary as an aid to the medical profession by presenting interesting and informative programs by way of good speakers, amusing skits, etc.

Tallapoosa County has affiliated with Elmore County Auxiliary, and for their help we are extremely grateful. But we need more counties to join with us. We believe that if more physicians encouraged their wives to take an interest in the Auxiliary, we could increase our membership to be more in line with that of the Medical Association.

Vicki Cunningham

OBITUARIES

EVANS—Kenneth P. Evans, M. D., Sylacauga, died January 12, 1962, at the age of 58. A native of Coker, Alabama, he received his pre-medical training at the University of Alabama and his medical degree from Rush Medical School. Dr. Evans served his internship at Grady Hospital in Atlanta.

He was a member of the Talladega County Medical Society, Medical Association of the State of Alabama, and American Medical Association.

Survivors include the widow, Mrs. Anna Evans, Sylacauga; a daughter, Miss Dorothy Evans, Atlanta; a son, Donald Patton Evans, New Orleans; a sister, Mrs. Ann Rutherford, Nashville, Tennessee.

HOLLER—Carl A. F. Holler, M. D., Gadsden, health officer of Etowah and Cherokee counties, died on January 25 at the age of 63.

The veteran public health worker was a native of Ames, Iowa, and a graduate of Northwestern Medical School. He had been in charge of the Etowah health office since February 1, 1946. He expanded his work to include Cherokee County in recent years.

He was a veteran of World War I, World War II, and the Korean conflict and was a member of the Veterans of Foreign Wars, the Methodist Church, the Etowah County Medical Society, Medical Association of the State of Alabama, and American Medical Association.

Surviving are his wife, Mrs. Zora Holler; a son, Carl A. F. Holler, Jr., Hampton, Virginia; a brother and a sister.

LESTER—Belford Smith Lester, M. D., Birmingham, died on January 18, 1962, at the age of 77.

The Guthrie, Kentucky native was a 1907 graduate of Vanderbilt School of Medicine.

For many years he was chief surgeon at Sloss-Sheffield, now United States Pipe and Foundry Company. Dr. Lester practiced medicine in Birmingham from 1908 until he retired in 1950.

Dr. Lester was an honorary steward and member of the board of the First Methodist Church. He was a member of the Jefferson County Medical Society, Birmingham Surgical Society, Medical Association of the State of Alabama, Southern Surgical Association, and American Medical Association.

He is survived by his wife, Mrs. Norma Hood Lester, and a son, B. S. Lester, Jr., Boca Raton, Florida.

MAGRUDER—Thomas V. Magruder, M. D., Birmingham, died on January 19, 1962, at the age of 75.

Dr. Magruder, a native of Canton, Mississippi, was a graduate of the University of Mississippi and Tulane University School of Medicine. He received his medical degree in 1910 and completed his medical training at St. Vincent's Hospital in Birmingham. He practiced in Birmingham from 1917 until he retired in 1954.

He was a member of the Birmingham Surgical Society, Jefferson County Medical Society, Medical Association of the State of Alabama, American College of Surgeons, and American Medical Association.

In 1960 he received his 50 year certificate of distinction.

Survivors are his wife, Mrs. Sara Magruder; a son, Dr. Thomas V. Magruder, Jr., Birmingham; a daughter, Mrs. A. W. Jones, Birmingham; a sister, Mrs. A. M. Wheeler, Montgomery; a brother, Will Magruder, Hollandale, Mississippi; five grandchildren and two nephews.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

April 1962

No. 10

What The General Practitioner Should Know About Glaucoma

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Philadelphia, Pennsylvania

Glaucoma causes more than ten per cent of blindness in the United States. Prevention of blindness is possible only when the diagnosis is known. Diagnosis, in turn, depends upon a well informed medical profession, each member of whom must have an awareness of the disease and some understanding of present day concepts pertaining to glaucoma.

Dr. Scheie graduated from the University of Minnesota in 1936 and is now a professor of ophthalmology at the University of Pennsylvania. He is a Fellow of the American College of Surgeons, a member of the American Academy of Ophthalmology and Oto-Laryngology, American Ophthalmological Society, and Association for Research in Ophthalmology.

From the department of ophthalmology, Hospital of the University of Pennsylvania, Graduate School, University of Pennsylvania, Philadelphia General Hospital, and Children's Hospital of Philadelphia.

Presented at the Medical Progress Assembly in Birmingham, Alabama, on September 19, 1961.

The general practitioner who cares for a large segment of our population especially should be well informed about the symptomatology and be on the alert for the condition. He should be aware that recent surveys indicate that one in every forty individuals over age forty has glaucoma.

Glaucoma is a disease in which the intraocular pressure is elevated, the eye being comparable to an overly inflated basketball. Vision is lost because of pressure damage to the optic nerve. The cause of the elevated pressure is frequently obscure, but in certain instances it is known. Glaucoma, therefore, is classified as primary or idiopathic when the cause is not known, and secondary when the cause is apparent. The latter results from some local ocular disease such as inflammation, intraocular tumor, dislocation of the lens, congenital anomalies, and many other conditions. Primary glaucoma, the topic upon which I will dwell is of greater import-

ance. It may occur at any time from birth to old age but it predominately affects older individuals. With increasing longevity, it is assuming increasing importance in ophthalmology.

Glaucoma results from a disturbance in the flow of aqueous through the eye. Aqueous humor is secreted by the ciliary body in the region of the ciliary processes. It then flows forward between the posterior surface of the iris and the anterior surface of the lens to enter the anterior chamber, from which it escapes through the Canal of Schlemm at the periphery of the anterior chamber. (Fig. 1)

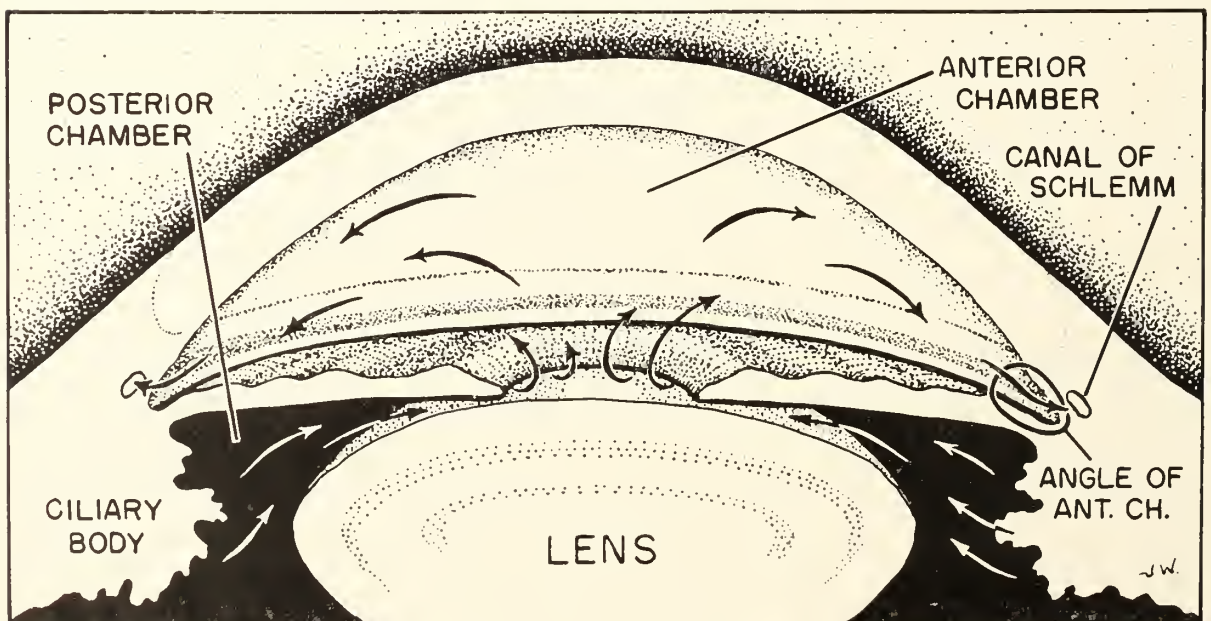
The anterior chamber consists of two portions, the anterior chamber proper and the angle of the anterior chamber which occupies the periphery. (Fig. 2) The angle of the anterior chamber lies behind the anterior 1.5 mm. of opaque sclera adjacent to clear cornea and just in front of the base of the iris. The outer or scleral wall of the angle of the anterior chamber contains Schlemm's Canal and is lined by a layer of porous fibers called the trabecula, through which aqueous must flow to enter the Canal of Schlemm. The

trabecula serves as a filter, much like the sieve in a sink, and the Canal of Schlemm might be compared to the pipe leading from the sink. The Canal of Schlemm, in turn, is drained by vessels called aqueous veins which carry aqueous to blood-containing veins located within the sclera and conjunctiva.

The most plausible explanations of elevated intraocular pressure are: (1) increased production of aqueous, (2) changes in quality of aqueous, (3) obstruction to the outflow of aqueous at some portion of the drainage mechanism. Studies to date point to an obstructive nature of the disease. The aqueous appears qualitatively normal in primary glaucoma. Furthermore, recent studies by Grant, Becker and others have shown that the production of aqueous, rarely, is increased but that outflow usually is impaired, indicating an obstructive origin.

A glance at a cross section of the angle of the anterior chamber indicates that two general types of obstruction to aqueous outflow are possible, and likewise two different types of glaucoma, acute and chronic. First, if the root of the iris were to come in contact with

Fig. 1. Diagrammatic drawing showing flow of aqueous from posterior to anterior chamber with escape through Canal of Schlemm



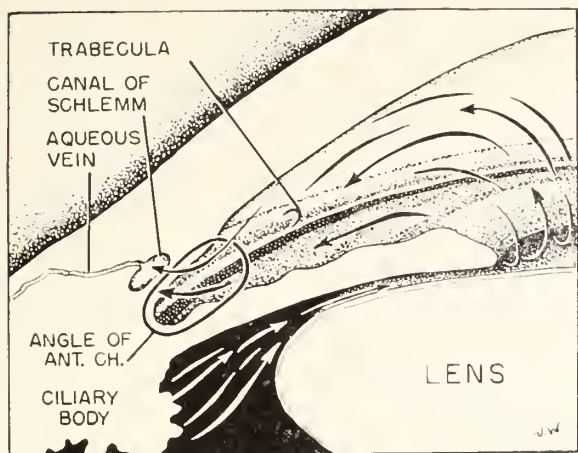


Fig. 2. Magnified drawing to illustrate diagrammatically anatomy of drainage mechanism in scleral wall of anterior chamber

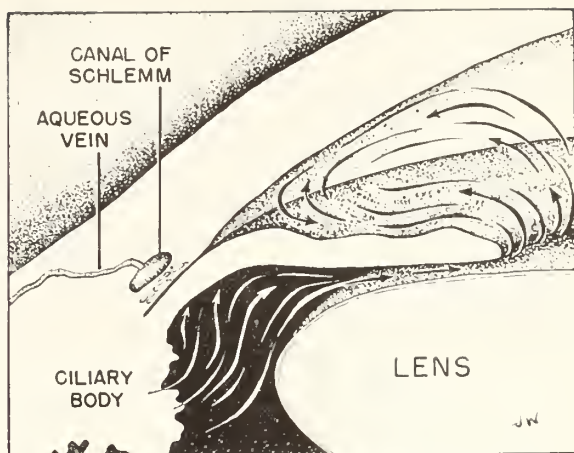


Fig. 3. Diagrammatic drawing illustrating closure of angle by root of iris in acute congestive glaucoma

the trabecula, escape of aqueous would be prevented and the pressure would rise rapidly. (Fig. 3) This occurs in eyes with a narrow angle of the anterior chamber in which the periphery of the iris is anatomically close to the outer angle wall. The symptoms are those of acute, congestive glaucoma, usually with severe pain. Until the attack occurs, the eyes are normal except for the narrowness of the angle.

Chronic simple glaucoma occurs in eyes where the obstruction is located within the scleral wall of the angle of the anterior chamber at some level in the drainage mechanism. The obstruction might be located in the trabecula, Canal of Schlemm, or aqueous veins. (Fig. 2) The disease usually has an insidious onset. The degree of obstruction to aqueous outflow is usually proportional to the elevation in pressure. Differentiation between the acute and chronic types of glaucoma is greatly facilitated by estimation of the proximity of the root of the iris to the trabecula or corneoscleral wall of the angle of the anterior chamber. This is done with the help of a specially made contact lens called a gonioscope.

As previously stated, the only apparent abnormality in acute glaucoma is the proximity of the root of the iris to the trabecula. The

pressure becomes elevated only when the iris comes into contact with the trabecula. (Fig. 3) The aqueous no longer is able to escape through the trabecular fibers into the Canal of Schlemm because the iris acts much like a rubber dam overlying the sieve in a sink. Aqueous continues to be secreted by the ciliary body and pressure is built up in back of the iris to set up a vicious circle. This view was supported by Grant who measured the facility of outflow of aqueous and found the rate to be normal during the interval between attacks, even though the angle was narrow, but markedly impaired during the acute attacks. The underlying cause of the disease, therefore, is anatomic narrowness of the angle of the anterior chamber. The secondary factors which permit the iris to come in contact with the trabecula and give final closure of the angle include pupillary dilatation, emotional and other factors. Emphasis is placed upon recognizing narrowness of the angle prior to an acute attack and doing a prophylactic peripheral iridectomy.

Chronic simple glaucoma is found, in the majority of instances, in eyes with an anterior chamber of normal or relatively normal depth, and as a result the angle of the anterior chamber is open, the iris is not in contact, and the aqueous has access to the tra-

becula-Canal of Schlemm mechanism. Studies by Grant have demonstrated impairment of aqueous outflow in eyes with elevated pressure under such conditions. The clinical picture is that of a chronic, insidious disease, usually with slowly progressive visual loss. Hence, the term, "chronic simple glaucoma" has been applied or, as has been suggested more recently as a result of gonioscopic studies, "wide or open angle glaucoma."

The diagnosis of chronic simple glaucoma is extremely difficult. All individuals over 40 years of age should be encouraged to have measurements of intraocular pressure and an ophthalmoscopic examination with careful search for glaucoma cupping. These can be done as a screening measure by a general practitioner with a moderate amount of training. Whenever the diagnosis is suspected, the patient should be referred to an ophthalmologist. If the general practitioner does not wish to do tonometry, patients should at least be encouraged to have examinations by their ophthalmologist at no longer than two year intervals. Prevention of blindness is possible only by establishing a diagnosis.

Patients with chronic simple glaucoma usually have no complaints. Occasionally, they may complain of periods of blurred vision or, more commonly, headache or a feeling of fullness in the eye. Visual acuity is of little or no diagnostic value because the central vision remains normal until blindness is imminent. Damage to the nerve occurs in such a way that the macular region, or the point of most acute vision, is preserved until the patient has nearly lost all the rest of his visual field. External examination is normal except for the occasional finding of pupils slightly on the large side, which react poorly to light and accommodation. Ophthalmoscopic examination reveals cupping of the optic nerve head, due to pressure excavation.

The diagnosis, however, should be made, if possible, before such obvious signs. Glaucoma cupping is associated with loss of visual field and visual deterioration, and for that reason every effort should be made to establish the diagnosis before such a serious find-

ing has occurred. The intraocular pressure should be recorded on every patient over 35 years of age, and even in younger individuals where there is any suspicion of the disease. Such measurements afford the best means of diagnosing this type of glaucoma. If the pressure is 25 mm. Hg or more when recorded with a Schiøtz tonometer, the diagnosis should be suspected. Whenever the pressure is suspiciously elevated, careful more technical studies should be carried out, probably by an ophthalmologist, to exclude the diagnosis.

Visual fields offer confirmatory evidence of the disease if cupping of the nerve head is present. I have never seen a visual field defect in glaucoma without cupping, and the diagnosis is rarely made by visual field studies.

Visual fields do offer an excellent method of evaluating the efficacy of treatment. The characteristic visual field defect is "nerve fiber bundle" in type. The nerve fibers are interrupted in certain areas of their distribution over the retina. This results in loss of vision extending upward and downward from the optic nerve and radiating around the macular region. The macular region and likewise central vision are spared until late in the disease. Damage to the optic nerve characteristically occurs with chronic simple glaucoma because the pressure is elevated more or less constantly; whereas, in acute congestive glaucoma, the pressure is high only during periods of contact of the iris with the trabecula and is not sustained because attacks usually are promptly remedied by medical or surgical treatment. If not controlled and angle closure becomes chronic, cupping of the nerve develops as in other types of glaucoma.

The provocative test which is most commonly done for chronic simple glaucoma is one known as the "water provocative." The patient is asked to drink a liter of water within a period of five minutes, and the intraocular pressure is measured at 15 minute intervals for the next hour and a half. Since the system is flooded with water, the water tends

to diffuse through all the organs of the body, including the eye. If it enters the eye, but escape from the anterior chamber is impeded, the intraocular pressure rises. This test should be done on all suspected patients. Although quite reliable, it is not completely foolproof and can occasionally be negative, even in the presence of glaucoma. When any doubt exists, the patient should be re-evaluated in three to six months. The greatest of care is urged because if such a patient were to disappear from observation, near blindness might ensue during the next few years with none or few symptoms. Tonographic studies of aqueous outflow can be helpful in diagnosis. This consists of applying a known weight to the eye for a period of four minutes and recording the full intraocular pressure. The rate of escape of aqueous can be calculated from these values.

Acute glaucoma is diagnosed very early during the acute phase. However, early diagnosis in the pre-glaucoma or interval phase requires facility with a slit lamp microscope and gonioscope, because it is essential to detect narrowness of the angle of the anterior chamber. The patient may have had none or early minimal attacks of acute glaucoma, the pressure rising and falling quite rapidly, causing minimal symptoms. Mild corneal edema might result in seeing rainbows or halos around lights. Mild discomfort in or about the eye might have been noticed. Acute rises in pressure most often occur at night due to pupillary dilatation occurring in the dark, or in dim light during movies or while watching television. These mild attacks may subside upon retiring for the night. One reason this is true is that during sleep, the pupil becomes miotic and the iris is pulled away from the angle, reestablishing normal outflow of aqueous. When the patient is seen in one's office, the intraocular pressure is normal and the only clue is usually narrowness of the angle. The patient may give a history that sounds like a previous severe attack with marked pain in the eye, headache, and even nausea and vomiting, or he may come in with those symptoms. Any patient with a narrow angle who has normal intra-

ocular pressure should be subjected to provocative tests. This may be done by dilating the pupil to deliberately crowd the angle and observing the pressure response. The patient must be very carefully watched. Miosis with pilocarpine or eserine should be induced at the first sign of rising pressure.

Fortunately, classic attacks of acute congestive glaucoma announce their presence by halos around lights, pain and discomfort to the patient. During the acute attack the visual acuity is blurred. External examination may reveal a painful, red eye with a hazy cornea during an acute attack or only a very shallow angle of the anterior chamber if between attacks or before an attack has occurred. The ophthalmologist should constantly be on the alert for a shallow anterior chamber, particularly when doing a slit lamp examination. If the iris appears close to the cornea he should then do gonioscopic studies to more carefully evaluate the width of the angle. The fundi are usually normal in acute glaucoma although a clear view may be prevented because of corneal edema and haze. During the acute attack, the pressure is markedly elevated and may be as high as 60 to 70 mm. Hg. However, if the patient has had no symptoms but has only a narrow angle, or has had only mild acute attacks the pressure may be normal when he is seen in the office. The visual fields are usually normal, because the pressure rise is not sustained for a long enough period to damage the nerve.

The treatment of chronic simple glaucoma requires great judgment. Every attempt should be made to treat this disease by a medical regime. These patients rarely have attacks of acute congestive glaucoma and respond very poorly to surgery. The most effective operations create a fistula through the corneoscleral wall to provide for the drainage of aqueous into the subconjunctival space. Such operations are hazardous, they frequently fail to filter and thus do not control pressure, and are accompanied by many severe complications such as cataractous changes occurring during the years following

operation and intraocular infections which pass through the conjunctiva covering the fistula leading into the eye. For this reason, operation is done only after a carefully managed medical regime has failed. Medical treatment consists of miotic drugs, epinephrine and carbonic anhydrase inhibitors. If the ocular pressure can be kept consistently under 35 mm. Hg and without visual field loss, surgery is usually not indicated. Other factors which must be taken into consideration are the age and general health of the patient, and whether or not he will cooperate with a good medical regime.

The treatment of narrow angle glaucoma is primarily surgical. During the interval or pre-glaucoma phase, simple peripheral iridectomy should be done because subsequent acute attacks of glaucoma are the rule, any one of which may be fulminating and blinding. If the patient is first seen during an acute congestive attack, every attempt, however, should be made to lower the pressure during the acute congestive phase by medical means. With the pressure thus controlled, the eye can be operated under optimum circumstances, when it is no longer red and inflamed, and there is much less danger of hemorrhage and other complications. However, if the pressure is not controlled in 12 hours, surgery should be done. In early cases, or instances where the pressure has been controlled by

miotics, rather simple surgery is effective, such as excising a tiny piece of iris, a peripheral iridectomy, which allows the aqueous to flow from front to back and prevents contact of the iris with the trabecula at a future date. This operation is usually curative and is accompanied by few early and, so far as we know, no late complications. If an attack of acute congestive glaucoma has continued for longer than 24 or certainly 48 hours, or if the iris has become adherent to the trabecula as a result of repeated attacks, a fistula for subconjunctival drainage of aqueous must be provided just as in the chronic simple type of disease. Since these operations are mutilating and dangerous, it is much better to have made an early diagnosis which would have permitted a safer procedure.

Conclusions

1. Present day concepts pertaining to primary glaucoma are reviewed.
2. Symptomatology of the disease is discussed.
3. Periodic ocular examination, including measurement of intraocular pressure and evaluation of angle width, should be urged at at least two year intervals.
4. Prevention of blinding from glaucoma will be possible only by constant vigilance on the part of an informed medical profession.

The Low Incidence Of Pulmonary Embolism In Multiple Myeloma With Speculation On The Possibility Of Active Immunization Against Thrombosis And Atherosclerosis

J. H. ROGERS, M. D.

Gadsden, Alabama

In a previous publication the author presented evidence that the incidence of coronary thrombosis in tuberculous individuals is less than in the general population.¹ Attention was called to the low incidence of pulmonary embolism in this disease which has been reported by others. In a later study, the author presented evidence that the incidence of coronary thrombosis, cerebral vascular accident, and pulmonary embolism in persons afflicted with leprosy is less than could ordinarily be expected.² The theory was advanced that in these diseases a relative in vivo hypocoagulable state of the blood exists which accounts for these findings. The suggestion was made that this state of the blood is mediated through changes in the plasma

proteins which in general consists of an elevation of the globulin fraction and a lowering of the albumin fraction. It was further suggested that these unusual globulins, in kind or amount, may interfere with clotting through complexing with clotting factors, or that the increased globulins and lowered albumin may be associated with increased fibrinolytic activity.

These investigations stimulated the present one which is concerned with the incidence of pulmonary embolism in multiple myeloma. As is well known, in myeloma there is an overall increase in plasma globulins with a corresponding decrease in plasma albumin. Moreover, it is well established in this disease that there is complexing of unusual globulins with clotting factors and, at least in some cases, increased fibrinolytic activity; and these processes are thought to play a large part in the strong hemorrhagic tendency in myeloma.³ In only a third of the cases are the platelets significantly lowered.³

Dr. Rogers graduated from the University of Virginia School of Medicine in 1939, and is engaged in the practice of internal medicine in Gadsden, Alabama.

From: The Holy Name Of Jesus Hospital, Gadsden, Alabama.

MULTIPLE MYELOMA

The combined experience concerning the incidence of pulmonary embolism in autopsied myeloma cases of a number of large teaching hospitals throughout the country was collected. Twenty-five hospitals contributed cases to the study. The largest single series consisted of 103 cases from Dr. Honor M. Kidd, Vancouver General Hospital, Vancouver, B. C. The average age of these cases at time of death was 61 years. This is probably representative of the whole group.

Dr. Kidd's impression "that the vasculature (referring specifically to cerebral arteries, coronary arteries, and aorta) in general was in a much healthier state than would be expected in this age group" is worthy of note. The following table summarizes the findings.

TABLE I

Total Myeloma Cases	Massive (Fatal) Pulmonary Embolism	Minor Pulmonary Embolism	Total Pulmonary Embolism
532	12 (2.3%)	12 (2.3%)	24 (4.51%)

In any case in which the embolism was not clearly stated or implied to be minor by the reporting pathologist, it has been considered massive.

For rough comparison it is generally stated that pulmonary embolism occurs in about ten per cent of all autopsies and is massive in four per cent.¹ The important matter of age to the incidence of pulmonary embolism is considered in the discussion which follows.

Discussion

There is little doubt that the incidence of pulmonary embolism in these myeloma cases is unusually low and this is even more remarkable considering the usual age of myeloma patients—50 to 70 years. It is well known that the incidence of pulmonary embolism increases with advancing age. In one autopsy series in a large custodial institution 512 subjects with average age of 65.6 years were studied. Thromboembolic lesions were

present in 132 or 25.7 per cent. Massive pulmonary embolism was the cause of death in 73 cases or 14.2 per cent.⁵ This group fairly closely resembles in number and average age the myeloma cases presented in this paper. When arranged in table form, the contrast in the incidence of pulmonary embolism is striking.

TABLE II

Total Cases Multiple Myeloma Av. age at death presumably 61 yrs.	Massive (Fatal) Pulmonary Embolism	Minor Pulmonary Embolism	Total Pulmonary Embolism
508	11 (2.2%)	12 (2.4%)	23 (4.6%)
Custodial institution inmates av. age at death 65.6 yrs.			
512	73 (14.2%)	59 (11.5%)	132 (25.7%)

Moreover, malignancy in general is usually regarded as a pre-disposing factor in the development of thrombosis and pulmonary embolism. In another study pulmonary embolism was found in 17.1 per cent of 1,394 autopsied subjects with malignant conditions.⁶

It has been said that the occurrence of myocardial infarction in myeloma patients is unusual.⁷ This has been related to a diminished degree of coronary atherosclerosis in these subjects which in turn has been related to "favorable" changes in the blood lipids including, generally, low cholesterol blood levels. The findings in this study indicate a relative in vivo hypocoagulable state of the blood in this disease. If myocardial infarction is indeed rare in myeloma patients, this circumstance could as well be explained by a lessening of thrombotic events, including coronary thrombosis, in the disease. At this point one cannot but recall that Rokitansky, over a hundred years ago, postulated that atherosclerosis itself begins with intimal

fibrin deposits.^{8*} If this is true one might expect a lessening of atherosclerosis in persons with relatively hypocoagulable blood, or with subjects in which fibrinolytic activity is at a relatively high level.

It is now possible to assemble the following groups which have in common alterations of plasma proteins consisting of elevation of the globulin fraction and lowering of the albumin fraction, lowered incidence of heart attacks, and lowered incidence of pulmonary embolism.

1. People with a history of tuberculosis.¹
2. People with leprosy.²
3. Multiple myeloma patients.⁷
4. People with cirrhosis of the liver.^{9, 10, 11}
5. Native populations of Africa and Asia.¹²

It should be pointed out that in the tuberculous and leprous groups—excluding far advanced and terminal tuberculous cases—serum cholesterol levels are not characteristically lowered and in fact tend to be elevated.¹³

It is worth noting that in tuberculosis there is some direct evidence that the blood is relatively hypocoagulable. Stahelin in 1920 using Fonio's method of determining the "coagulation valence" of blood demonstrated this in 51 of 110 cases.¹⁴ This, by modern standards, crude method measures the ability of blood to overcome the anticoagulant effect of increasing concentrations of magnesium sulfate solutions. A number of studies have shown an increase in the prothrombin time in

a sizeable proportion of tuberculous cases and in one of these studies almost $\frac{2}{3}$ of the cases showed an increase. This was not thought to be related to the severity of the disease or the medicines used in its treatment.¹⁵

Various clotting factors are known to be reduced in cirrhosis of the liver whatever the mechanism. Fibrinolytic activity is increased regularly, also, but the cause for this is unknown.¹⁶

In leprosy no extensive clotting studies have been done since hemorrhagic complications do not occur.

In a recent study of blood coagulation and fibrinolysis in Bantu men, the Bantu differed from the white controls in having lower plasma prothrombin and serum factor VII levels and in having better prothrombin consumption and higher plasma levels of antihemophilic globulin and they generated more plasma thromboplastin than the controls. Fibrinolytic activity was generally faster in Bantu subjects. Serum globulin levels were significantly higher and albumin levels significantly lower than the controls.¹⁷ While some of these changes would appear to favor clotting, if, as believed, thromboembolism in African natives is less than usually encountered, the aggregate of these changed values plus, no doubt, other unknown changes results in lessened *in vivo* blood coagulability.

Preservation of the intravascular fluidity of blood is a fundamental property without which life would be impossible. How this is accomplished is not now known. But certainly the universally present fibrinolytic system plays some part in the prevention of thrombosis. It would seem likely, however, that the groups enumerated above possess this property to a greater degree than ordinarily expected. That this property may in some way be enhanced by generally increasing plasma globulin levels and diminishing albumin levels is a reasonable conjecture.

Recently it has been shown that injections of sodium caseinate in rabbits will regularly cause an increase in plasma globulin levels and a decrease in albumin levels, and it will

*It has been suggested repeatedly that there exists within the vascular tree a dynamic equilibrium between fibrin deposition and lysis. Simple proof for this theory is afforded by the fact that anticoagulant drugs such as dicumarol given in sufficiently large amounts will cause bleeding in anyone. There must normally be intimal fibrin deposition more or less continuously to obtain this hemorrhagic effect of the anticoagulant drugs. Since continuous fibrin deposition without balancing dissolution would render life impossible, there must be a functioning fibrinolytic system as well.

**The plasma protein changes in these populations are thought to be due to chronic or repeated infections of all sorts including malaria.

also cause a reduction in serum cholesterol.¹⁸ Older physicians will recall that injection of sterile milk was a common procedure in the treatment of various infections prior to the advent of sulfonamides and antibiotics. It seems reasonable to speculate that this "foreign protein" treatment induced similar plasma protein changes in these patients. Perhaps one way to safely induce a "relative in vivo hypocoagulable state of the blood" by augmentation of the natural defense against intravascular clotting has already been tested.

Foreign protein therapy has been used with considerable success in the treatment, and preventing of recurrences, of one thrombotic disease. The good, and frequently prolonged, effect of repeated intravenous typhoid vaccine injections on thromboangiitis obliterans, which has never been adequately explained, could well be explained by the mechanisms suggested in this paper.

Since any infection, in a sense, is a foreign protein stimulus, it is possible to generalize that populations subjected to chronic or repeated infections will experience the results of chronic or repeated foreign protein reactions on the plasma proteins and on the clotting and fibrinolytic systems. So far as the incidence of thrombotic and atherosclerotic disease is concerned, this would appear to be beneficial. According to this view, a reduction in the incidence of chronic or repeated infections in a population would lead to an increased incidence of heart attacks, strokes, pulmonary embolism, and thrombotic disease in general. In an advanced society the adverse effect, so far as vascular clotting is concerned, of reducing or eliminating these foreign protein reactions by effective public health measures, antibiotics, adequate food, and good housing is perhaps reflected in an increased incidence of these diseases.

If genetic differences can be ignored, the most meaningful fact to be gleaned from the many population studies on the incidence of coronary disease is that there is a close re-

lationship between low incidence of coronary disease and poverty. That chronic or repeated infections are biologically significant factors in poverty can scarcely be argued, and it is attested to in the laboratory by the regular absolute rise in total serum globulins. To totally ignore this in favor of diet studies and experiments is to waste part of the value of these important clues. It should be noted, however, that the theories advanced here and the dietary theories concerning the pathogenesis of coronary disease are not mutually exclusive.

No apology need be made for the speculative nature of this paper since at present we have no in vitro test which accurately gauges in vivo blood coagulability. Clues as to changes in in vivo coagulability, therefore, must necessarily rest on clinical and autopsy studies of incidence of thrombotic disease in various groups, inadequate and difficult as this may be.

Summary

Evidence is presented that the incidence of pulmonary embolism in multiple myeloma is low and less than could ordinarily be expected. It is postulated that this phenomenon is indicative of a relative in vivo hypocoagulable state of the blood in this disease brought about by increased plasma globulins and lowered plasma albumin levels. It is noted that unusual globulins in myeloma may complex with clotting factors and that increased fibrinolytic activity has been observed. It is suggested that the low incidence of coronary disease seen in multiple myeloma is a result of these plasma protein changes. It is further suggested that similar changes found in people with a history of tuberculosis, leprosy, cirrhosis of the liver and native populations of Africa and Asia may be responsible for the low incidence of coronary disease and pulmonary embolism observed in these populations. A speculation as to a possible way of

inducing these plasma protein changes is noted.

Addendum

Since this manuscript was prepared for publication, the author has come across the following observations in a text book of pharmacology of an earlier day. This section of the text deals with the effects of the injection of foreign protein, including cows' milk and "peptone" (a product of partial protein cleavage). The effect on coagulation has been noticed "in most animals but not in rabbits". The following paragraph applies specifically to peptone and, by inference, to "foreign protein" in general.

"Blood Coagulation: The direct addition of peptone to blood does not affect coagulation; but intravenous injection generally renders the blood noncoagulable. This is due to an antithrombin; the blood containing all the necessary elements for coagulation, so that it clots, e.g., on simple dilution with water. This antithrombin seems to be nucleoprotein formed in the liver (Doyon, Morel and Policard, 1911; Denny and Minot, 1915; its production is not increased by bile, bile salts, secretion or electric stimulation.) R. J. Lee and Vincent, 1915, attribute the noncoagulability of the anaphylactic blood mainly to an anomalous behavior of the blood platelets."¹⁹

Another observation which is pertinent to this paper is the following statement: "In immune reactions, e.g., Anaphylactic shock and peptone shock, fibrinolytic activity is produced (Rocha e Silva and Teixeira 1946, Ungar 1953)."²⁰

It is conceded that the above effects, noted in vitro, are of short duration and occur before detectable changes in globulin and albumin levels could occur.

Recent work²¹ indicates "there is no evidence that myeloma proteins are composed of abnormal globulin molecules. The evidence suggests that the differences between gamma globulin from normal and abnormal plasma cells may be quantitative rather than qualita-

tive." If true, the speculations made in this paper are greatly strengthened.

Acknowledgement

Grateful acknowledgement is made to Doctors—R. E. Henderson, E. D. Warner, Jorge Maldonado, D. E. Smith, T. M. Peery, E. M. Butt, J. M. B. Bloodworth, Jr., E. Von Haam, Seth Haber, R. W. Wissler, J. E. Porter, C. F. Geschickter, C. A. Krakower, Marilyn J. O'Brien, T. S. Beecher, C. A. McWhorter, J. G. Kidd, J. W. C. Hagstrom, Isidore Snapper, Emil Frei, III, Ph. R. Rezek, Honor M. Kidd, R. W. Coon, J. F. Burton, Simon Koletsky, B. S. Harrold, Harold Fink, Raymond Yesner, C. M. Whorton, H. T. Enterline, E. E. McKee, and K. A. Snider who furnished the data concerning the myeloma cases. Miss Ressie Faye Patterson rendered invaluable assistance in helping compile the material for the paper.

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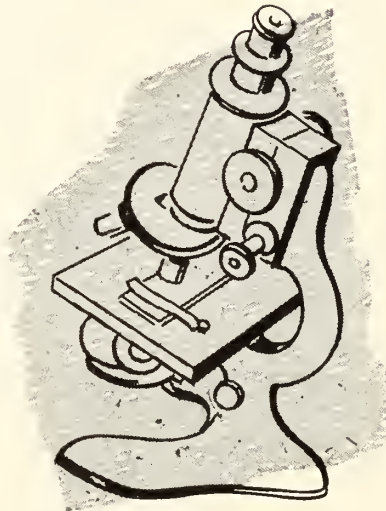
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Counseling With Parents Of Handicapped Children

EVA L. LLEWELLYN, M. S.

Montgomery, Alabama

Counseling with parents of handicapped children has received increasing attention in recent years. It is now recognized that these parents have unique problems in parent-child relationships and that they need special help in overcoming them. The physician and special education teacher are in a strategic position to give this help.

Counseling is an ambiguous term in medicine and education. Counseling with parents of handicapped children does not mean psychotherapy or assistance with general family problems. It means a process by which a parent is assisted in developing a satisfactory relationship with his handicapped child and in determining a realistic program for his care. The term "handicapped" refers to many things; among them a child with central nervous system disability showing intellectual, behavioral, or medical problems with or without motor disability. The neurologically in-

jured child presents many special problems which require the assistance of medical and educational authorities.

Before considering the specific things which physicians, special education teachers, school principals, and other professional personnel might do in order to facilitate counseling, it might be helpful to examine some of the emotional reactions of parents which enter into the care for a handicapped child. First, the parent acknowledges in a mature manner the actuality of the child's disability. He accepts the child as he is and does not make a slave of himself in trying to deal with the child. He continues to function in the accustomed role of a parent within the family and approves of the needs of his normal children as well as those of the handicapped child. Second, the parent attempts to disguise his own feelings and so to hide from himself the reality that his child is disabled. This creates many artificialities that are not conducive to the best interests of the child. The parent showing this type of reaction often tries to find some circumstance or specific cause on which he can blame his child's difficulties. He tends to go from place to place searching for some way in which the child may be called normal. Often he blames the disability on the child, saying that he is "lazy" or "will not try," or he "could do it if he wanted to." Third, the parent is un-

Mrs. Llewellyn received her master of science degree in education and her master of science degree in psychology from Auburn University.

She is a psychologist with the Diagnostic and Guidance Center sponsored by the Children's Bureau, United States Department of Health, Education and Welfare.

Presented at Workshop for Personnel Working with Exceptional Children sponsored by the Alabama State Department of Education on September 8, 1961.

able to face the reality of the disability. This leads to an uncompromising denial of the situation. This is the parent who refuses placement in special education and subjects his child to failure rather than admit a problem exists.¹

Recognizing that parents may well react with disguising or denying an acceptance of their child's condition, the role of counselor will be strengthened if the causes of these reactions can be understood. Why do parents fight so hard to deny what seems so obvious? Parents do not have a basis of comparison which is available to professional personnel who have seen other neurologically injured children. The symptoms of hyperactivity, resistance, poor speech, short attention span, slow response time, or poor muscular coordination spell out significant things. This behavior, however, makes little sense to the parent.

Professional personnel further have the advantage of observing handicapped children without excessive emotionality. They can be objective because the child is not their own, and the strong, fundamental needs of the parent do not influence their judgment. If each professional person, however, could have an experience regarding the threat of neurologic injury, he would appreciate better the great anxiety which the parents of a handicapped child feel.

Lack of Understanding

Many of the emotional problems of the parent concerning his child stem from a lack of understanding the cause of the disability. Often the parent feels that the child's condition is due in some way to a preceding action of his own. Such ideas serve to increase the feelings of guilt or shame and too often he feels that he is directly at fault.

This feeling of personal responsibility has a further reaction. The parent tends to have a lowered perception of himself. He tends to see himself as having failed in a very fundamental sense so that his self-concept is lowered.² As a result, he may begin to with-

draw from social contacts and normal interpersonal relationships. In some cases, the parents may go into depressive states so that the family structure disintegrates as a result. In other cases the emotional balance of the home is impaired so that normal parent-child relationships are impossible.

Marital difficulties also may arise because of parental anxieties. Each parent may blame the other for the child's condition thus accentuating familial relations and complicating the child's progress.

Probably the most common and important reason why a parent may react emotionally is the tendency which everyone has to see himself in his own children. Parents see the child as an extension of themselves and to interpret the child's success or failure as their own. Those who work in an educational setting see this frequently with parents who are constantly pushing their handicapped child to higher academic achievement and who exhibit anxiety when the child encounters difficulty in learning. The insistence that a child performs better academically at home than at school is still another way of exhibiting this anxiety. In these cases, the problems of the parent are the ones that are foremost, not those of the child. The parent has confused his own self-image with that of his child. Thus in seeing himself in the child, failure is taken by the parent as a blow to himself.²

What then are some of the specific ways in which counselors can be of assistance? Of primary importance is the assistance given by a physician. Of all professional personnel involved, he can best establish a fair diagnosis, determine the cause of the child's disability and plan a training program. In communities where there are no specially trained physicians to assist educational authorities in evaluating the neurologic disorder, those in authority must work with a local physician who could be interested in handicapped children. The neurologically impaired child is a medical problem. School authorities, regardless of training and experience, need from a physician support and verification of

their own findings. Parent groups can play an important part by working with the physician to interest him in their mutual problems and to educate both him and themselves simultaneously. Knowledge regarding the nature of neurologic disabilities is in its developmental phase, and many physicians may not have ready information at hand.

A physician who is interested in medical counseling will benefit parents most if he can give medical information in an understanding, sympathetic manner. Parents of young children are rarely able emotionally to handle long-range predictions regarding the severity of their child's disability. They are seriously in need, however, of help with the present problems of the child—his eating, sleeping and toilet habits, his hyperactivity, seizures or withdrawal symptoms. Physicians who give parents the full truth without regard to parental emotionality can do irreparable harm to both parents and child. However, sympathetic medical interpretation and sound pediatric advice can make the difference between parental realism and emotional chaos. Parents must be led gradually, according to their ability to understand and accept, to a realization of the overall situation.

The special education teacher can help parents further by initiating counseling with the following considerations: the basic aim of counseling will be the lessening of anxiety, fear and misconception. Intellectual understanding of the realities of the child's condition must be followed by a lessening of anxiety and the establishment of emotional balance.³

The teacher will need to be realistic about the child's academic performance and progress. This does not mean that one needs to predict ultimate academic achievement or to anticipate problems at each stage in the child's development. Research in the field of handicapped children indicates that long-range predictions are frequently in error, and a child may often achieve either above or below what would have been predicted at an earlier age. One can often say frankly to a parent that many factors operate in a

child's achievement and that one should not predict the outcome when so many variables are present.

A teacher can help a parent see a child's strengths and weaknesses. Parents are so frequently overwhelmed with anxiety that they fail to see that a child may be able to do some things very well and yet do others very poorly. The role of the teacher will certainly include analysis of the child's particular educational disabilities, but there is hardly any child who does not have some strengths either intellectual, social or emotional. To point out strengths as well as weaknesses is to be fair as well as helpful. Parents need to save face. When they can recognize the child's good qualities, they are encouraged in very fundamental ways.

Parental acceptance can never be accomplished in one or even a few interviews. There must be a developmental process through which the parent passes before recognizing adequately the problems of his own child.² How long this takes depends on many personality characteristics of the parent and varies with the strength of these factors.

Group Counseling

Sometimes parent counseling can be most satisfactorily handled through group counseling. There is much to be said for the emotional support which parents receive from realizing that they are not alone and that others have similar problems and share their failures and successes.

Parents follow the same principle of individual differences as children. Children in the classroom show that they differ in ability, emotional maturity and socio-economic level. Parents will vary in a similar manner, and one's choice of words and manner of speaking will be based on an awareness of these individual differences. It will not be effective to discuss a neurologic disorder and its full implications with the parent who does not understand these terms. Conversely, a parent with good intelligence and educational back-

ground will appreciate details of diagnosis which will clarify the problem for him.

Necessarily, the counselor's role will not be a didactic or teaching one. One cannot teach a parent to accept his child, to love him, or to understand his limitations. The firm tone of voice which frequently is effective with a neurologically injured child may well send his parents shopping for another diagnosis. The aim with parents will be to give them information, to allow them to grow in understanding, to arrive at their own decision, and to stand by for further help.

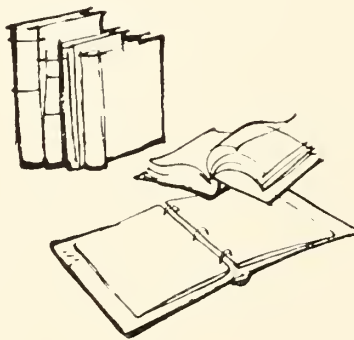
A further aim in counseling will be to encourage parents to develop in the child attitudes of independence, self-control, understanding and cooperation. Parents who permit the child to become passive and dependent, or spoiled and demanding are adding immeasurably to the child's disability. His progress in special education, his social ac-

ceptance, and his hope for eventual vocational placement will depend as much on his attitude and behavior as on the degree of his disability.

The role of professional personnel is not an easy one. The diversity and multiplicity of problems inherent in the diagnosis, training and education of handicapped children are truly formidable. The reward comes each time there is realization of seeing one's efforts translated into improved relationships between parent and child.

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Editorials

KERR-MILLS VS. KING-ANDERSON

We are engaged in a historic struggle to preserve our country's unique system of medical care and our stature as a profession. Both are seriously threatened by current proposals to incorporate health care benefits into the Social Security System.

Because of this threat, organized medicine has launched a campaign to acquaint members of Congress, civic and business leaders, and others with the facts about the King-Anderson bill and its meaning to the future of medical care in this country.

The following article, prepared by the Medical Society of the State of New York, contains the provisions of the bill as well as a summary of the most important arguments against it. Physicians are urged to read the piece so that they will be aware of all the issues posed by this highly controversial legislation.

FACTS ABOUT THE KING-ANDERSON BILL

Introduced in the House by Rep. Cecil R. King, Dem., Cal. (H.R. 4222, 87th Congress).

Introduced in the Senate by Sen. Clinton P. Anderson, Dem., N. M. (S. 909, 87th Congress).

1. The King-Anderson Bill would provide these benefits:

a. Up to 90 days of hospitalization for each illness. The patient, however, would pay \$10 a day for each of the first nine days in the hospital, with a minimum payment of \$20.

b. Up to 180 days in a nursing home. Patients would be transferred to nursing homes when they no longer required in patient care in a hospital.

c. Out patient hospital diagnostic services,

which would be subject to a deductible of \$20 for each complete diagnostic study.

d. Home health services, up to a maximum of 240 visits a year.

2. The bill would apply to all persons over 65 years of age covered by the Old Age and Survivors Insurance provisions of the Social Security Act—or about 14,250,000 persons of the 16,750,000 in this age group.

3. It would be financed by a $\frac{1}{4}$ of one per cent increase in the Social Security payroll tax for both employees and employers and by an increase in the taxable earnings base from \$4,800 to \$5,000. (Secretary Abraham A. Ribicoff of the Department of Health, Education and Welfare, has recently indicated that the base may be \$5,200.)

4. These increases would require a fund of about \$1,500,000,000 a year for the financing of the benefits to be provided.

ARGUMENTS AGAINST THE KING-ANDERSON BILL

1. It would lower the quality of medical care:

- a. Because of the elements of compulsion, regulation, and control included in the measure.
- b. Because of the emphasis placed on fiscal matters rather than on the quality of the medical services to be rendered to patients.
- c. Because it would cause overuse of hospital and nursing home facilities.
- d. Because it would quickly expand from a limited program for the elderly to a national compulsory health insurance plan covering the entire population—in short, socialized medicine.
- e. Because a study of the compulsory health plans in effect in other countries shows that these plans produce a disruption of the doctor-patient relationship, delays in hospital admissions, long waiting lists for operations and ther-

apies, time wasted in the overcrowded offices of physicians, regimentation of medical practice, an adverse effect on medical research, and a shortage of medical facilities and personnel.

f. Because the bill would compel physicians to think constantly of regulations rather than the best possible medical course to follow—whether this involved admitting a patient to a hospital or prescribing a certain drug.

2. The King-Anderson Bill presupposes that the elderly are (a) in poor health and (b) in poor financial condition. This is not so. Surveys show that the great majority of old people are both healthy and capable of taking care of their financial needs. In fact, many of the elderly can, and do, obtain much of their health care through voluntary health insurance. For the few not so well situated, there are the various public and private old age assistance programs, and, in an increasing number of states, programs implementing the Kerr-Mills Medical Assistance to the Aged Law. In New York the Metcalf-McCloskey Law is now in effect.

3. The cost of the King-Anderson Bill was originally estimated at a little over \$1,000,000,000 a year. By the admission of officials of the Department of Health, Education and Welfare:

- a. The cost of nursing home services alone would be at least \$24,000,000 a year rather than the original figure of \$9,000,000—and it might turn out to be \$255,000,000 a year.
- b. Because of the second thoughts of HEW officials, the administration now plans to change the bill to provide for an increase of $\frac{1}{4}$ of one per cent on a tax base of \$5,200 rather than the \$5,000 mentioned in the original measure. The latter represented a hike from the tax base now in effect—\$4,800.

4. The bill would change the purpose of our Social Security system from providing a

cash "floor of protection" on which employees and employers could build on their own, to providing service benefits—in this case, medical care for the aged. This would open the floodgates to making the Social Security system an unlimited source of all kinds of social benefits, thereby threatening the Social Security System itself. Housing, clothing, food in lieu of cash, can be envisaged as future benefits.

5. If enacted into law, the King-Anderson Bill would also endanger:
 - a. The private health insurance and prepayment plans that now provide health care of a high quality to a large percentage of the elderly and are continually improving their programs to include: (1) more benefits and (2) more old people.
 - b. The voluntary efforts at the community level, which are responsible for many of the hospital and other health facilities now in existence, and for much of the experimentation that has resulted in such developments as home-maker services, home care programs and progressive patient care.
6. The bill is both wasteful and ineffective because:
 - a. It would cover millions of people who neither need help in paying for their health care nor want such help.
 - b. On the other hand, it would fail to help those who need it most—*the people not covered by Social Security*.
 - c. It would determine eligibility on the basis of *age* rather than *need*. Thus, there would be such situations as that of the man over 65 who was still at work, and, therefore, collecting no Social Security benefits, but who would, nevertheless, be entitled to payments for health care under the King-Anderson Bill.
7. It would destroy the tradition of individual and family responsibility that has

helped make America great. The federal government has a role to play—but only after the individual, his family, his community, and his state have all shown they are unable to meet a particular need.

8. It falsely assumes that the sociological problems of old people can be solved through legislation. This is not so. Feelings of rejection, of not being wanted, can only be eliminated by greater understanding and changes in people's attitude to the aging process. Such changes can be brought about only by long-term *education*, not *legislation*.
9. The physicians of America believe that, instead of promoting the King-Anderson Bill, the federal government should be giving its full support to the Kerr-Mills Act. This is because:
 - a. The Kerr-Mills Law makes health care available to anyone over 65 who *needs* help—regardless of whether he is covered by Social Security or not.
 - b. It permits each state to provide whatever health services it chooses for its elderly citizens.
 - c. It provides grants to the states on the basis of per capita income and the services which each state elects to provide.
 - d. Each state can establish its own eligibility requirements.
 - e. The bill supplements rather than supplants voluntary health insurance programs.
 - f. The bill allows the states to provide for payments to physicians as well as to hospitals and nursing homes.
 - g. As of January 1, 1962, 38 states, Puerto Rico and the Virgin Islands had already initiated programs implementing Kerr-Mills. This is a remarkable achievement, considering the short time that has elapsed since the enactment of the Kerr-Mills Law in the summer of 1960.

Do You Favor The Compulsory Social Security Taxation Method Of Financing Health Care For The Aged ?

Editor's Note: This question was asked of all Alabama Senators and Congressmen and all candidates for these offices. The following letters had been received by the Journal's press time.

GEORGE ANDREWS

Dear Dr. Smith:

Thank you for your letter of March 13th, requesting that I answer the following question, "Do you favor the compulsory social security taxation method of financing health care for the aged?"

I can certainly understand your interest in the above subject. I think it would be safe to assume that all members of the Alabama delegation are deeply interested in proper medical care for our senior citizens. However, I am not prepared to give you an irrevocable commitment either for or against any of the current legislation on this matter. During my entire 18 years in Congress, I have never committed myself on any legislation before I examined it carefully in its final form and assured myself beyond any reasonable doubt that the legislation is justly beneficial for all citizens. I believe any congressman who makes promises on legislation while it is still in a nebulous, speculative stage is irresponsible and unworthy of the serious responsibilities of his office.

In closing, I want to thank you for seeking my views on medical care for the aged and I want to assure you that I will vote for the legislation which I believe is most beneficial to all taxpayers.

With kindest regards, I am

Sincerely yours,

George Andrews

Representative, 3rd District

JOHN G. CROMMELIN

Dear Dr. Smith:

In reply to your letter of March 12, 1962 and your question, "Do you favor the compulsory social security taxation method of financing health care for the aged?" I wish to state that I am opposed to the social security taxation method of financing health care for the aged or anyone else.

I am strongly opposed to the Federal Government arrogating to itself any authority not specifically granted in the Constitution of the United States. You and I know that subversives in our Federal Government have used senator Lister Hill to surreptitiously advance "socialized medicine," and using the social security administrative functions to promote this subversion would be a typical communist-jewish method of legalizing a fraud.

Sincerely,

John G. Crommelin

Candidate for the

United States Senate

W. E. DODD

Dear Dr. Smith:

I do not favor anything **that is compulsory** "but the laws of God."

When you say compulsory you give no one any alternative to choose from, one or the other.

I do favor a method of medical care for the

aged and or elderly citizens other than a strictly socialistic form of medical care. I have plans for this method if I am successful in my bid for Congressman.

This question can be better answered by the voters when they go to choose their representatives at the polls, for I feel that many of the people that are paying social security benefits feel that after they have served their lifetime paying taxes of all kinds that the government and society owes them a little something in return.

Sincerely yours,
W. E. Dodd
Candidate for House of
Representatives
9th District

CARL ELLIOTT

Dear Dr. Smith:

Thank you for your letter of March 13, 1962, in which you inquire about pending legislation to provide hospital care for the aged.

My general attitude is that we should all strive to provide increasingly better opportunities for health and hospital care for all Americans.

As I am sure you know, several bills are now pending before the House Ways and Means Committee where, as I understand it, hearings will be held in the second half of May. With respect to your question, "Do you favor the compulsory social security taxation method of financing health care for the aged?", it would be premature, if not irresponsible for me to decide which approach I favor until I have learned what the firm alternatives are.

However, I want to assure you that when and if the Ways and Means Committee reports a bill to provide hospital care for our older people, I will give the matter serious consideration when it comes before the Rules Committee, of which I am a member, and

when it is before the full U. S. House of Representatives for debate.

Thanking you for your letter and with kindest regards, I am

Your friend,
Carl Elliott
Representative
7th District, Alabama

GEORGE GRANT

Dear Dr. Smith:

Congressman Grant is presently in Alabama campaigning for re-election; however, I am pleased to write you in response to your letter inquiring whether he is in favor of compulsory social security taxation as a method of financing health care for the aged. The answer is **no!!**

Inasmuch as the Congress enacted the Kerr-Mills Act a couple of years ago and it is now being implemented in the individual states, he feels that this should be given a trial before other methods are tried; and, furthermore, **he would never be in favor of socialized medicine!**

Thanking you for writing Mr. Grant about this and for passing his position along to the members of the State Medical Association, I am sure the Congressman would want his position known to every single member.

All good wishes on behalf of the Congressman.

Sincerely,
Mrs. Margaret Harding
Executive Secretary to
George Grant
Representative
2nd District

DON HALLMARK

Dear Sir:

In reply to your letter of March 12th, I would like to state briefly my stand concerning the facet of socialization to which you

referred. Generally speaking I am unalterably opposed to socialization. The so called social security taxation method of financing health care for the aged is merely the "camel's nose in the tent." This has been admitted in writing by the originator of the proposed legislation.

I would like to discuss this at length with you at your convenience. I have written to the press upon several occasions that the health for the aged proposals are a cruel hoax upon the people of the nation.

Sincerely yours,
Don Hallmark
Candidate for
United States Senate

LISTER HILL

Dear Dr. Smith:

I am just in receipt of your letter of the 12th, and it is a pleasure to hear from you about the proposed legislation to establish a health care program for the aged under Social Security.

As you of course know, I helped to win enactment of the Kerr-Mills program, and I want to assure you, as I have assured Dr. Adams and many other friends of the Medical Association of Alabama, that I am opposed to Federal interference with the practice of medicine. It is gratifying to me, as I know it is to you, that further implementation of the Kerr-Mills program is under way in Alabama and that there has been a continued increase in enrollments under voluntary health insurance plans. I am also mindful of the fine efforts our doctors and hospitals are putting forth to help take care of the medical needs of the elderly. I think we would agree that the Kerr-Mills program, in conjunction with these other efforts, should have a fair opportunity to show what it can do toward helping to meet the problems and needs of medical care for the aged.

The House of Representatives, which has original jurisdiction over legislation to amend the Social Security Law, has not yet acted

on the King bill, and it is still before the House Ways and Means Committee. Regarding your question about a method of financing health care for the aged, I, of course, have no way of knowing what kind of proposal may finally come out of the House Ways and Means Committee and what methods of financing may be suggested therein. I want you to know, however, that I am already in touch with Chairman Harry Byrd and other friends on the Senate Finance Committee regarding the measure. You may be sure I will continue to do all in my power to help preserve our American system of medical practice and the freedoms which have helped to make it great.

Please never hesitate to let me hear from you.

With kindest regards and best wishes, I am

Very sincerely,
Lister Hill
United States Senator

GEORGE HUDDLESTON

Dear Dr. Smith:

Thank you for your letter of March 13, 1962, written on behalf of the Medical Association of Alabama. It was indeed good to hear from you.

There is merit in the position taken by the Medical Association. The continual centralization of governmental power in Washington presents an increased threat to our democratic form of government and our free enterprise economy. Further legislation, on any subject, of a compulsory nature would only serve to aggravate the present trend toward federalism.

I hope that this answers your question and that you will transmit to the medical profession in Alabama my views on this subject.

With best wishes, I remain

Yours sincerely,
George Huddleston, Jr.
Representative
9th District

ROBERT E. JONES

Dear Dr. Smith:

Thank you for your letter of March 13 concerning my position on pending legislation to provide medical care for the aged. I have had inquiries from Alabama's County Medical Societies about this legislation (the King-Anderson bill) and I am replying to the Medical Association as I have to the County groups.

The King bill was introduced in the first session of the 87th Congress and was referred to the House Ways and Means Committee for their deliberation. This proposal, as introduced, does not have my support.

The Ways and Means Committee held extensive hearings on the bill last year but did not give further consideration to the measure in executive session.

The chairman of the Ways and Means Committee, Mr. Mills, told me recently that the whole proposition of medical care for the aged would be subject for consideration by the committee before Congress adjourned. There is no certainty as to what amendments will be proposed or what amendments will be adopted by the committee in executive session. Therefore, it would be very difficult for me to speculate as to the contents of the bill before the Ways and Means Committee has had an opportunity to work its will.

If I am given an opportunity to vote on an amended bill, I shall, of course, want to give it my closest study and best evaluation before doing so.

I appreciate the interest of the Medical Association in this important public issue.

With all good wishes, I am

Sincerely,
Robert E. Jones
Representative
8th District

ALBERT RAINS

Dear Dr. Smith:

Thank you for your letter of March 13 concerning the social security taxation method of financing health care for the aged.

I have always been, and am now, opposed to any legislation which would lead to socialized medicine.

I would like to see the Kerr-Mills law given full opportunity toward solving the problems of the aged for medical aid.

With all good wishes to you, I am

Sincerely yours,
Albert Rains
Representative
5th District, Alabama

KENNETH A. ROBERTS

Dear Dr. Smith:

Thank you for your recent letter advising me that the members of the Medical Association of the State of Alabama would like to know if I favor the compulsory social security taxation method of financing health care for the aged.

It is my opinion that we should first give the Kerr-Mills Bill an opportunity to work before considering any legislation in connection with medical care for the aged.

With kindest regards and best wishes, I am

Sincerely yours,
Kenneth A. Roberts
Representative
4th District, Alabama

ALBERT L. ROEMER

Dear Dr. Smith:

I wish to reply to your letter of March 13th, in which you ask the question "Do you favor the compulsory social security taxation method of financing health care for the aged?"

As a candidate for Congress from the Second District of Alabama, I wish to give to the

people of this district a **positive program of social progress.**

I am emphatically in favor of medical care through social security **or other means**, for older Alabama citizens. We must have social progress. Everyone knows, and it goes without saying, that we have more and more older citizens as medical science progresses. Over half (52.7 per cent to be exact) of those over sixty-five have an annual income of from nothing to less than \$1000.00. They must have outside help. Medical help for older citizens is, in my opinion, the most important issue before the United States Congress today. I feel that it is on the very threshold of passage. I will work and push for this legislation so that older citizens can get this assistance. I believe that such a program will also be beneficial to the members of the Medical Association of the State of Alabama.

With kindest personal regards,

Sincerely,

Albert L. Roemer
Candidate for Congress
2nd District

ARMISTEAD I. SELDEN, JR.

Dear Dr. Smith:

Thank you for your recent letter with reference to the proposed medical care legislation.

Since this legislation has not yet been reported by the Ways and Means Committee, we have no way of ascertaining what provisions it will contain when it reaches the House of Representatives for consideration. It has been my policy not to commit my vote on a proposal until it is actually before the House and I have had an opportunity to hear it fully debated. I endeavor to approach all legislation with an open mind and decide upon my vote only after thoroughly familiarizing myself with the measure and then hearing it debated. I trust you will understand my position in this matter.

I might point out to you, however, that I supported the Kerr-Mills Bill when it passed the House in 1960.

It was a pleasure to hear from you, and I hope you will continue to call to my attention all issues in which the Medical Association of Alabama is interested.

Sincerely yours,

Armistead I. Selden, Jr.
Representative
6th District, Alabama

JOHN SPARKMAN

Dear Dr. Smith:

Thank you for your letter concerning medical care for the aged through Social Security.

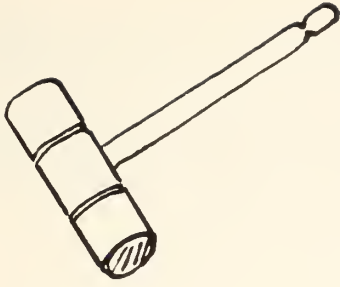
I am sure you will recall that I supported and voted for the Kerr-Mills Act. I followed closely the development of the medical care program in Alabama under the Kerr-Mills provisions. It appears that our state has moved along at an excellent pace on this program.

As you know, the President recently submitted a slightly revised medical care program to the Congress. Because the measure involves revenue, it is expected to be considered first by the House of Representatives. There is not much the Senate can do about revenue proposals until and unless it receives a House-passed bill. At this time, it is not possible to predict what the bill will be like when, and if, the House completes its consideration of the proposal. Be that as it may, however, certainly, I would not knowingly support any measure which would change the traditional doctor-patient relationship in our country.

With best wishes, I am

Sincerely,

John Sparkman
United States Senator



President's Page



Physicians are still forced by the pressure of unpleasant circumstances to impress upon friends in the community the lack of wisdom and the lack of real sincerity which are inherent in some of the proposals made by the present national administration in certain areas of medical care for our people. The most imminent legislation is in relation to care for the aged. You have been reminded many times that a great deal of agitation has been aroused, based upon "demand" instead of "need." Strenuous efforts are being made to organize various groups of our senior citizens to press these "demands." Everybody knows that doctors are well aware of certain needs in these groups. There also are needs in other age groups of our population. It is also a matter of record that the needs of the older people have been much exaggerated. The Kerr-Mills Law has been put into operation in many states and will be a great step forward in caring for these needs. Some improvements may be made as time goes on, but certainly we feel that local communities can determine their needs better than some far-off agency in Washington.

There has been a great hue and cry about the humiliation that may be felt by these older people if help to them is offered on the basis of need. The "means test" has been used to play upon emotions of the voters. In the various meetings of senior citizens, and in their literature, this matter has been played up at length. Let me remind you that they have entirely overlooked the fact that here is a large group of people who are demanding that the younger generations pay a great part of their medical care expenses, without the slightest contribution on the part of the old-

sters. It is difficult to see how this attitude is conducive to self-respect and pride. What they are actually doing is to take advantage of a present political agitation, to beg for themselves monetary aid in some areas where no need exists. They would be very much humiliated if they were making such demands for food! But because of vehement political stimulation they are being led into this state of affairs.

As we discuss this legislation in our community, let us bring out these facts. It can well be called to the attention of the senior citizens themselves; and when meetings are called by them, we should be sure that this aspect of the case is presented to them.

This is our most pressing problem, but we may be compelled to combat similar proposals for years to come. It will take all our combined efforts to halt the trend toward concentrating political and economic power in the hands of a small group of self-selected arrangers of the American way of life. It has been very enlightening and very encouraging to see the earnest and conscientious ways in which the members of the State Medical Association have responded to this challenge.

It has been an humbling experience, and yet a source of great satisfaction, to have served as president of this great association of doctors who are continuing to direct the health affairs of this state in the great tradition inaugurated by Jerome Cochran.

John W. Simpson, M. D.



ORGANIZATION SECTION

PREVIEW

101st Annual Session Program

Municipal Auditorium

Birmingham, Alabama

April 26-28, 1962

One of the highlights of the 101st annual session of the Medical Association of the State of Alabama in Birmingham will be the closed circuit color telecast of a teaching demonstration on problems in interpretation and management of chest pain. The hour-long television program will be conducted by Dr. Tinsley R. Harrison and Dr. James McElroy of the department of medicine and a group of students and junior physicians. The color television demonstration will be projected by a new method on a large screen in the Municipal Auditorium on Friday morning from 9:30 to 10:30. This new method of projection, developed by Ciba Pharmaceutical Company, allows a greater number of spectators to view, in color, technical and scientific demonstrations usually seen by only a few people at a time. Physicians attending the showing will have an opportunity to question directly the distant demonstrators.

Following the color telecast will be the delivery of the annual Jerome Cochran Lecture by Dr. A. Ashley Weech, professor and director of the department of pediatrics of the

University of Cincinnati Medical College and director of Cincinnati's Children's Hospital and Research Foundation. He will report on "A Study in the Emotions of Childhood."

The Association will honor nineteen of its former presidents Saturday morning by presenting them with a Past President Plaque in recognition of their distinguished and faithful services rendered to the medical profession. Those to be honored are Dr. J. D. Heacock, Birmingham; Dr. E. V. Caldwell, Huntsville; Dr. James R. Garber, Birmingham; Dr. Harvey B. Searcy, Tuscaloosa; Dr. Carl A. Grote, Huntsville; Dr. Jesse P. Chapman, Selma; Dr. J. Paul Jones, Camden; Dr. Frank C. Wilson, Birmingham; Dr. Joseph M. Weldon, Mobile; Dr. T. Brannon Hubbard, Sr., Montgomery; Dr. B. W. McNease, Fayette; Dr. J. Orville Morgan, Gadsden; Dr. Frank L. Chennault, Decatur; Dr. Grady O. Segrest, Mobile; Dr. John A. Martin, Montgomery; Dr. Edgar G. Givhan, Birmingham; Dr. William R. Carter, Repton; Dr. Hugh E. Gray, Anniston; and Dr. John W. Simpson, Birmingham.

REGISTRATION

The official registration desk will be located just inside the east parking lot entrance of the Municipal Auditorium. It will be open for registration of Association members and guests at 8:00 A.M. Thursday, Friday, and Saturday mornings, April 26, 27, and 28. The registration desk will be open for exhibitors from 3:30 to 5:00 P.M. on Wednesday afternoon, April 25. Members, guests, and exhibitors should register there immediately upon arrival to obtain badges and programs. No one will be admitted to the exhibit rooms and meeting hall without official badges.

SCIENTIFIC PAPERS

The maximum time consumed by local speakers should not exceed twenty minutes. This time limit, however, does not apply to out-of-state speakers.

All papers read before the Association should be deposited with the Secretary when read.

Papers will be called in the order in which they appear in the program. Should the speaker be absent when called, his paper will be passed and called again when the program is concluded.

PAGING SERVICE

A paging service will be maintained by the Physicians and Surgeons Exchange of Birmingham. Messages may be relayed by phoning TR 1-4611.

TRANSPORTATION

Complimentary shuttle bus service between downtown hotels and the Auditorium will be available at certain specified times during the meeting. Shuttle bus schedules may be obtained at the registration desk.

REFRESHMENTS

Coca-Cola, sandwiches, and coffee will be served daily with the compliments of the

Coca-Cola Bottling Company, the Alabama Medical Assistants Association, and the Health Insurance Council.

BOARD OF CENSORS MEETING

The State Board of Censors will meet at the Tutwiler Hotel on Wednesday morning, April 25, at 10:00 A.M. to consider Association reports.

FIFTY YEAR CLUB

Members of the Association who, as of this year, have practiced medicine for fifty years will be honored by the Association Friday morning.

SCIENTIFIC EXHIBITS

Scientific exhibits will be displayed on the main floor of the Municipal Auditorium. These exhibits are of great interest to the membership and are prepared by physicians who will be on hand to discuss their exhibits with you. All members are urged to visit each scientific exhibit in the interest of professional education.

TECHNICAL EXHIBITS

Sixty technical exhibits will be displayed adjacent to the scientific exhibits on the main floor of the Auditorium. These exhibits will give up-to-date information on the latest products and services available to the medical profession.

It is extremely important that you visit each of these exhibits and register with the exhibitor. Your co-operation is requested since these displays are designed and shown especially for your benefit.

SOCIAL EVENTS

PRESIDENT'S BALL

Complimentary tickets to the President's Ball at the Vestavia Country Club, Friday

evening, April 27, will be available to all *registered* physicians, exhibitors, and guests. Tickets at the door for non-registered physicians and their guests will be \$5 per person.

Presentation of the Douglas L. Cannon Medical Reporter Awards and the James Roscoe Shamblyn Memorial Golf Trophy will be made at this time.

PHYSICIANS GOLF TOURNAMENT

Physicians are invited to compete for the second annual James Roscoe Shamblyn Memorial Golf Trophy on the Birmingham Country Club's famous West Course. Tournament rounds can be started throughout the day. Prizes will be awarded. A member of the golf committee will be present to register players and arrange foursomes. Write Jackson B. Clayton, M. D., 1025 Woodward Building, Birmingham 3, Alabama for reservations.

EXHIBITORS PARTY

A reception for technical exhibitors will be held at the Tutwiler Hotel on Wednesday, April 25, from 4:30 to 6:30 P.M.

OPEN HOUSE

Members of the Association and their guests are invited to an Open House and social hour at Children's Hospital beginning at 5:00 P.M., Thursday, April 26.

BARBECUE

A Barbecue at Norwood Clinic will be held at 6:00 P.M., Thursday, April 26.

WOMAN'S AUXILIARY

The 38th annual convention of the Woman's Auxiliary to the Medical Association of the State of Alabama will be held in the Tutwiler Hotel on Thursday and Friday, April 26-27. The registration desk in the lobby of the hotel will be open for pre-registration on Wednesday, April 25, from 1:00 P.M. to 5:00

P.M.; Thursday, April 26, from 8:30 A.M. to 3:00 P.M.; and Friday from 8:30 A.M. to 12:00 noon.

SPECIALTY SOCIETIES

Certain specialty societies plan to have meetings, breakfasts, luncheons, and dinners during the Association's annual session. Check the official program for listing of these events.

ALUMNI LUNCHEON

A luncheon and business meeting of the Alumni Association of the Medical Department of the University of Alabama will be held Friday, April 27, at 12:30 P.M. in the Ballroom of the Tutwiler Hotel.

HOBBY SHOW

The Woman's Auxiliary annual hobby show will be on display in the lobby of the Auditorium.

HOTEL RESERVATIONS

Neither the Medical Association of the State of Alabama nor the Jefferson County Medical Society maintains a Hotel Housing Bureau. Hotel reservations should be made directly with the hotel.

The following downtown hotels and motels are listed:

Bankhead Hotel, Essex House Hotel, Molton Hotel, Redmont Hotel, Thomas Jefferson Hotel, Town House Hotel, and Tutwiler Hotel.

Guest House Motel, Ranch House Motel, and Town House Motel.

PRESS ROOM

A press room for the Association and the Auxiliary will be maintained on the first floor of the Municipal Auditorium.



A Study Of Hospital Use And Costs

What are a person's chances of being hospitalized during a given year for surgery or other types of illness? How long does the average patient remain in the hospital for cancer, for digestive disorders, for other diagnostic categories? And how do hospital charges vary according to what ails the patient?

A recent study by Health Information Foundation throws new light on these and other questions about hospital use and costs. The Foundation analyzed the 1956 records of one Blue Cross plan—the Blue Cross Hospital Service of Indiana—and, specifically, the 843,000 subscribers enrolled under this fairly typical program. This group, though not an exact cross-section of the population in Indiana or the nation as a whole, is nevertheless large enough, according to the Foundation, “to furnish some measure of the diagnoses causing admission to general hospitals, length of stay, and costs of care.”

As the accompanying charts show, when all diagnoses were considered together there were 115.5 hospital admissions per 1,000 persons in this covered population. The average length of stay per admission was 7.3 days, so that total hospital use amounted to 838.8 days per 1,000 persons annually.

Hospital bills submitted to Blue Cross included average daily charges of \$22.91. This figure, the Foundation pointed out, includes the room rate plus all other hospital charges. The average bill per hospital stay in the Indiana study came to \$166; and these bills, when averaged over all Blue Cross subscribers (whether or not they were hospitalized), amounted to \$19.22 per person. This is close to the *national* average daily charge of \$22 reported by Health Information Foundation on the basis of a 1957-58 survey made in cooperation with the University of Chicago's National Opinion Research Center.

About two out of every three patients admitted to a hospital went there for surgery

(which, for purposes of this survey, included all obstetrical cases). The typical surgical patient had a relatively short stay (only 6.2 days) and a lower-than-average hospital bill (\$153 per admission). His *daily* charge, however, was \$24.69—somewhat higher than the average for all hospital patients.

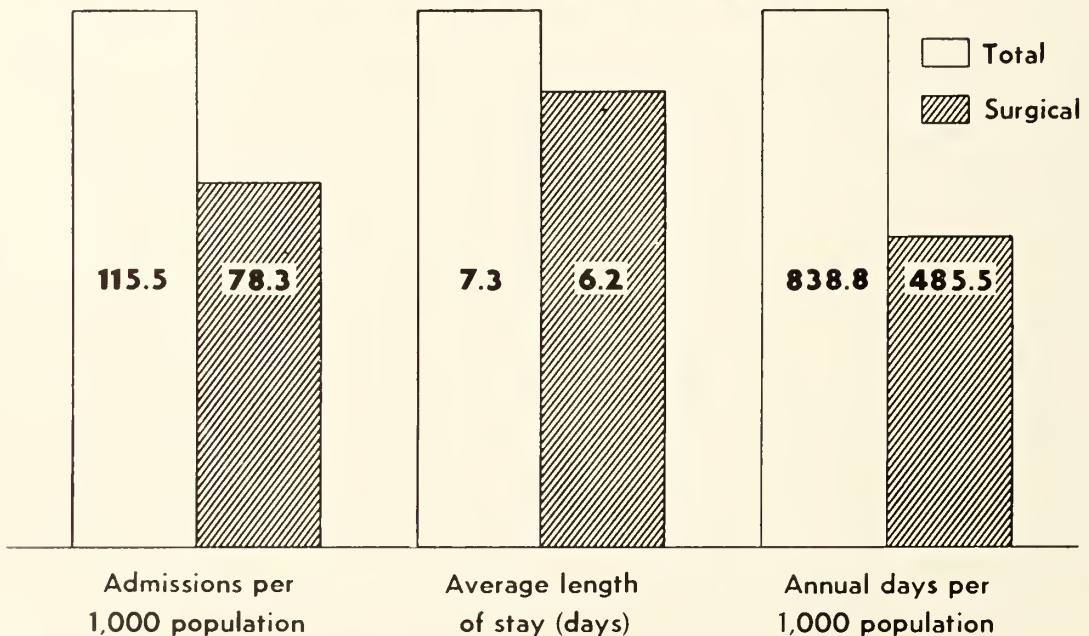
Obstetrical care was by far the most common condition for which patients were admitted to hospitals. One out of five hospital admissions fell into this category. But the average obstetrical patient had a relatively short stay of 4.6 days, and so her average hospital bill was only \$119—considerably below the average for all conditions.

Obstetrical care nevertheless has taken up an increasingly large part of the total hos-

pital-cost dollar in recent years—mainly because almost all births occur in hospitals today, against only about 37 per cent in 1935. But as George Bugbee, Foundation President, points out, the added cost of maternity services has been money well spent: "The reduction in infant and maternal mortality proves the value of new medical knowledge applied within the hospital."

Respiratory diseases and digestive diseases were also frequent reasons for hospital admissions, with each category accounting for 16 per cent of all admissions in the Health Information Foundation study. But since the average patient with a respiratory ailment remained only 3.4 days, his overall hospital bill was small—\$83.

How Much Hospital Care Is Used*



*Blue Cross Hospital Service, Indiana, 1956. Persons Enrolled Under Blue Cross Comprehensive 2 Certificate of Membership.

Health Information Foundation

The digestive category, which included such conditions as appendicitis, ulcer, hernia, and gallbladder diseases, showed an average stay of 8.1 days and a hospital bill of \$194. But this one category accounted for more than one-sixth of the total bill submitted to Blue Cross for all hospital admissions.

Relatively few patients—only 2.3 per 1,000 in the covered population—were admitted to hospitals with a diagnosis of cancer. Cancer patients, however, had the longest average stay of those in any category—15.5 days—and the highest hospital bill—\$387.

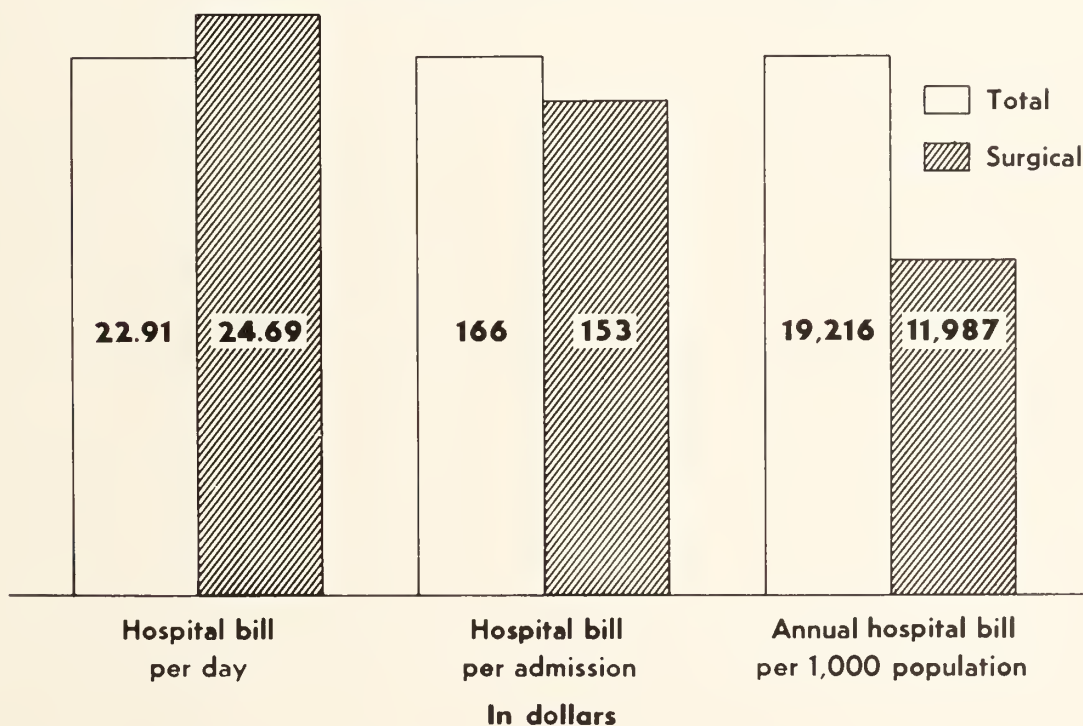
Compared with cancer patients, those with circulatory diseases had a higher admission rate (8.5 per 1,000 population) but a somewhat shorter average length of stay (12.0

days). The average hospital bill for patients in this category was \$264.

Findings of this Indiana study, said the Foundation, "give little support to the criticism that great numbers of patients are unnecessarily admitted to general hospitals or could be treated less expensively elsewhere." Mr. Bugbee pointed out, for example, that almost two-thirds of the total hospital bill submitted to Blue Cross was for patients requiring surgical or obstetrical care—services in which hospitalization was clearly indicated.

"It is no accident," he added, "that these high-cost services are ones through which recent reductions in mortality have been especially striking. The present cost, while substantial, is in part the price of progress."

What Hospital Care Costs^{*}



*Blue Cross Hospital Service, Indiana, 1956. Persons Enrolled Under Blue Cross Comprehensive 2 Certificate of Membership.

Health Information Foundation



MEDICAL CENTER NEWS

DEAN BERSON RESIGNS

Dr. Robert C. Berson, vice president of the University of Alabama for Health Affairs and dean of the Medical College of Alabama, has resigned his position to accept the post of Dean of the South Texas Medical School in San Antonio, according to an announcement by Dr. Frank A. Rose, president.

Dr. Joseph F. Volker, dean of the University of Alabama School of Dentistry and Director of Research and Graduate Studies, University of Alabama Medical Center, has been named to succeed Dr. Berson as vice president.

A committee has been appointed to recommend deans of the Medical College and the School of Dentistry and an announcement on these positions is expected soon, Dr. Rose said.

"Dr. Berson has performed an outstanding job for the University of Alabama. The opportunity he has with South Texas Medical School, which is a part of the University of Texas system, will offer him a wide scope for his leadership ability. We shall miss his guiding hand and his keen insight into medical as well as civic affairs of Alabama. The Medical Center has achieved its most rapid and widespread advancement during his tenure," Dr. Rose stated.

DR. HARRISON HONORED

Dr. Tinsley R. Harrison, professor of medicine at the Medical College of Alabama, has been named as one of three recipients of the American Heart Association's highest awards, the 1961 Gold Medal Award.

Dr. Harrison, widely known as a medical

teacher and researcher, was the first president of the American Heart Association in its present form as a national voluntary health agency. He headed the organization in 1948-49, the period in which the voluntary agency was evolved from the professional organization which preceded it.

He has been active in AHA since 1931 and served as a board member from 1942 to 1948. He is credited with a leading role in establishing the Association's program policy which places top priority on research to expanded knowledge of cardiovascular diseases.

He is a consultant at the Veterans Administration Hospital here and editor of "Principles of Internal Medicine," one of the most widely used texts in that field of medicine.

A native of Talladega, Dr. Harrison is a graduate of the University of Michigan and of Johns Hopkins School of Medicine. He has been professor of medicine at the Medical College of Alabama since 1950, and previously was on the faculties of Southwestern Medical College, Bowman Gray School of Medicine, and Vanderbilt University School of Medicine.

Other recipients of the 1961 Gold Heart Awards are Dr. Louis A. Katz, director of cardiovascular research at Michael Reese Hospital in Chicago, and Frank L. Mechem, Seattle, Washington attorney.

FACULTY MEMBERS PROMOTED

Fifteen faculty members of the Medical College of Alabama have been promoted.

Three assistant professors in the department of medicine were named as associate professors. They are Dr. Lloyd Hefner, Dr.

Margaret Klapper, and Dr. Herschel Murdaugh.

In the department of obstetrics and gynecology, Dr. Robert V. Barnett was promoted from clinical assistant professor to clinical associate professor. Dr. Martha Green and Dr. William Robertson, clinical instructors, were appointed clinical assistant professors.

Dr. Brooks Bishop and Dr. Walter Scott were promoted from assistant professor to clinical associate professor of pathology, and Dr. Robert B. Adams and Dr. Edgar P. Maroun were named as instructors.

The department of surgery announced that Dr. Leland Clark was given a full professorship in biochemistry, and Dr. Mario A. Accinno, Dr. Harry I. Blalock, and Dr. James S. Faulkner were named as clinical instructors in orthopedic surgery.

Dr. Joseph Reeves, associate professor of physiology, was elevated to a professor.

FIVE FELLOWSHIPS GRANTED

Five physicians from the Medical College of Alabama have been elected to full Fellowship status in the American College of Physicians by its Board of Regents. Their election was announced recently by Dr. Walter B. Frommeyer, Jr., Governor for Alabama.

Receiving this honor are: Dr. H. Brooks Cotten, clinical assistant professor; Dr. S. Richardson Hill, associate professor; Dr. Robert S. Hogan, clinical assistant professor; Dr. William O. Pardue, clinical assistant professor; and Dr. T. Joseph Reeves, professor.

Elected to associate membership in the College were Dr. Buris R. Boshell, assistant professor; Dr. Ben V. Branscomb, associate professor; Dr. E. E. Eddleman, Jr., associate professor; Dr. Claude M. Holland, Jr., clinical instructor; and Dr. William B. Jones, assistant professor. All are on the faculty in the department of medicine.

VISITING PROFESSOR

Dr. William Boyd of Ontario, Canada, one of the world's leading pathologists, is cur-

rently visiting the Medical Center as professor of pathology.

Dr. Boyd's eight-week professorship will include many lectures at both graduate and undergraduate school levels, according to Dr. Charles H. Lupton, chairman of the department of pathology.

The teaching pathology museum in the old Hillman building was established through the efforts and inspiration of Dr. Boyd. Through the years this valuable collection has continued to grow and now provides comprehensive visual coverage of many aspects of pathology study.

Dr. Boyd is author of some seventy medical and scientific papers and of six medical textbooks. He completed his latest edition of his "Textbook of Pathology" while here last year. He is presently preparing a new edition of his "Pathology for the Surgeon."

NEW RESEARCH GRANTS

The National Institutes of Health have awarded the Medical Center six research grant awards recently.

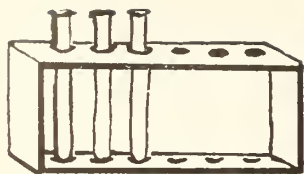
For oral environmental factors in dental caries—Dr. William Wingo, in behalf of Robert C. Caldwell—\$56,678 (\$18,878 the first year, with commitment for \$18,900 for two additional years.)

For teacher research training—Dr. Leonard Robinson, project director—\$46,949 for one year.

For metabolism of human connective tissue—Dr. True W. Robinson, principal investigator—\$23,000 (\$11,500 the first year, with commitment for \$11,500 for one additional year.)

For functional evaluation of surgical heart disease—Dr. Henry D. Thomas, principal investigator—\$19,780 (\$9,890 the first year, with commitment for \$9,890 for one additional year.)

For conference-publication—Dr. J. F. A. McManus, project director—\$7,000 for one year.



STATE DEPARTMENT OF HEALTH

SEMINAR ON VIRAL HEPATITIS

Hepatitis is recognized by public health officials as a growing problem in the state, nation, and world. An estimated 73,000 cases were reported in the United States in 1961. In the same year, Alabama had over 1,300 cases, the largest number recorded in the state since reporting began in 1952.

This disease is spread chiefly through human wastes; through common sources such as contaminated food and water; and through contaminated needles, surgical instruments, and blood products.

Because of its growing importance as a public health problem, viral hepatitis was chosen as the subject of a seminar presented last month at the 1962 annual meeting of the Alabama Public Health Association. The seminar was the first of a series being offered this year to state public health associations by the Communicable Disease Center, U. S. Public Health Service, Atlanta, Georgia.

Dr. Eugene J. Gillespie, Chief, Communicable Disease Center Services, Region IV, Public Health Service, Atlanta, was the first speaker. He summarized known principles and facts about hepatitis, including history, clinical manifestations, diagnosis, epidemiology, prevention, and control.

Dr. Heinz F. Eichenwald, Professor of Pediatrics, The New York Hospital, Cornell Medical Center, New York, then discussed principles and facts of public health importance. His discussion centered on several different aspects of the disease:

1. Early diagnosis: Since the course of the illness can be appreciably shortened by early recognition and treatment, it is of importance that the characteristic signs and symptoms of the pre-icteric phase be understood and properly interpreted. There are reliable clues to

the existence of the illness in a patient. A definite diagnosis can be established with considerable accuracy by simple tests and examinations performed in the home.

2. Viral illness with liver involvement not due to hepatitis viruses A or B: In recent years, a number of outbreaks of hepatitis-like illnesses have been described which are presumably of viral etiology but not due to the two "classic" hepatitis agents. The occurrence of such outbreaks is of interest to the clinician and to the public health worker since gamma globulin does not prevent this particular group of diseases and the epidemiology is strikingly different.

3. The proper use of gamma globulin: It must be recognized that there are positive indications as well as contraindications for the use of this biologic.

4. What to do when there is hepatitis in the area: The public health worker can do much to allay fear, to assure proper preventive measures in the home and in the hospital, and to coordinate efforts in a community to control the outbreak.

Dr. Eichenwald, who is the author of the Public Health Service manual on viral hepatitis, also discussed recent research pertaining to isolation of the etiologic agents of hepatitis.

A panel led by Dr. W. H. Y. Smith, director of the Bureau of Preventable Diseases, Alabama Department of Public Health, then commented on the information presented by the speakers and discussed state and local public health activities concerning hepatitis. Panel members were Mrs. Thyra Denison, Director, Bureau of Public Health Nursing, Jefferson County Health Department, and G. Russell Wright, Director, Division of Inspection, State Health Department.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1962

	Jan.	Feb.	*E. E. Feb.
Tuberculosis	87	79	142
Syphilis	103	155	106
Gonorrhea	294	331	293
Chancroid	3	3	3
Typhoid fever	1	0	1
Undulant fever	0	0	0
Amebic dysentery	2	1	1
Scarlet fever & strep. throat	162	129	99
Diphtheria	0	1	4
Whooping cough	3	5	21
Meningitis	4	3	13
Tularemia	1	0	5
Tetanus	1	0	1
Poliomyelitis	0	0	1
Encephalitis	1	0	0
Smallpox	0	0	0
Measles	564	314	417
Chickenpox	85	89	340
Mumps	81	68	194
Infectious hepatitis	142	167	52
Typhus fever	1	1	0
Malaria	0	0	0
Cancer	700	665	445
Pellagra	0	1	0
Rheumatic fever	19	13	13
Rheumatic heart	26	29	25
Influenza	507	2,778	1,441
Pneumonia	310	233	336
Rabies—Human cases	0	0	0
Pos. animal heads	1	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director
SPECIMENS EXAMINED

February 1962

Examinations for malaria	1
Examinations for diphtheria bacilli and Vincent's	22
Agglutination tests	446
Typhoid cultures (blood, feces, and urine)	447
Brucella cultures	3
Examinations for intestinal parasites	2,218
Darkfield examinations	5
Serologic tests for syphilis (blood and spinal fluid)	22,816
Examinations for gonococci	1,709
Complement fixation tests	85
Examinations for tubercle bacilli	4,031
Examinations for Negri bodies (smears and animal inoculations)	163
Water examinations	2,025
Milk and dairy products examinations	4,270
Miscellaneous examinations	4,963
Total	43,204

Dothan Branch Laboratory report not received in time to be included with this report.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA 1961

Live Births Deaths Causes of Death	Number Recorded			Rates*		
	1961 (Prov.)	1960 (Final)	1955-1959 (Average)	1961 (Prov.)	1960 (Final)	1955-1959 (Average)
Live Births	79,897	80,288	82,529	24.2	24.5	25.7
Deaths	29,386	30,108	27,895	8.9	9.2	8.7
Fetal Deaths	1,716	1,786	1,780	21.0	21.8	21.1
Infant Deaths—						
under one month	1,667	1,655	1,815	29.9	20.6	22.0
under one year	2,479	2,588	2,683	31.0	32.2	32.5
Maternal Deaths	58	62	74	7.1	7.6	8.8
Causes of Death						
Tuberculosis, 001-019	282	297	327	8.5	9.1	10.2
Syphilis, 020-029	68	45	69	2.1	1.4	2.1
Dysentery, 045-048	6	16	15	0.2	0.5	0.5
Diphtheria, 055	2	3	10	0.1	0.1	0.3
Whooping cough, 056	9	8	11	0.3	0.2	0.3
Meningococcal infections, 057	17	21	20	0.5	0.6	0.6
Poliomyelitis, 080, 081	3	2	11	0.1	0.1	0.3
Measles, 085	10	14	11	0.3	0.4	0.3
Malignant neoplasms, 140-205	3,855	3,789	3,530	116.6	115.8	110.0
Diabetes mellitus, 260	461	453	361	13.9	13.8	11.2
Pellagra, 281	7	3	13	0.2	0.1	0.4
Vascular lesions of central nervous system, 330-334	4,149	4,152	3,777	125.5	126.9	117.6
Rheumatic fever, 400-402	25	28	37	0.8	0.9	1.2
Diseases of the heart, 410-443	9,888	9,889	9,171	299.2	302.3	285.7
Hypertension with heart disease, 440-443	1,757	1,798	1,768	53.2	55.0	55.1
Diseases of the arteries, 450-456	718	655	601	21.7	20.0	18.7
Influenza, 480-483	101	373	188	3.1	11.4	5.9
Pneumonia, all forms, 490-493	817	1,008	818	24.7	30.8	25.5
Bronchitis, 500-502	48	83	55	1.4	2.5	1.7
Appendicitis, 550-553	31	34	34	0.9	1.0	1.1
Intestinal obstruction and hernia, 560, 561, 570	151	144	129	4.6	4.4	4.0
Gastro-enteritis and colitis, under 2, 571.0, 764	131	162	137	4.0	5.0	1.3
Cirrhosis of liver, 581	186	210	169	5.6	6.4	5.3
Diseases of pregnancy and childbirth, 640-689	58	62	74	7.1	7.6	8.8
Congenital malformations, 750-759	383	380	386	4.8	4.7	4.7
Immaturity at birth, 774-776	508	543	597	6.4	6.8	7.2
Accidents, total, 800-962	2,001	2,034	1,963	60.5	62.2	61.1
Motor vehicle accidents, 810-835, 960	934	932	920	28.3	28.5	28.7
All other defined causes	4,221	4,399	4,340	127.7	134.4	135.2
Ill-defined and unknown causes, 780-793, 795	1,250	1,301	1,041	37.8	39.8	32.4

*Rates: Birth and death—per 1,000 population
Infant deaths—per 1,000 live births
Fetal deaths—per 1,000 deliveries
Maternal deaths—per 10,000 deliveries
Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

While pursuing the national program for 1961-62, the Woman's Auxiliary to the Medical Association of the State of Alabama has emphasized legislation, AMEF, health careers, and health education projects jointly executed with other organizations.

Auxiliary members are involved with so many different community projects that it is impossible to mention all of them; therefore only three will be reported at this time.

Legislation has been and will continue to be our grimmest battle. At the time of this writing we are planning a "WHAM" (Women Help American Medicine) meeting in Montgomery on March 8. This is an educational program for doctors' wives sponsored by the American Medical Association and the Medical Association of the State of Alabama to explain the political significance of the King-Anderson and the Kerr-Mills bills. It will also give doctors' wives the "know-how" for playing a vital part in the battle against socialized medicine. Talks by Auxiliary members on medical legislation have been uniformly and surprisingly well received by the laity, which convinces me that when properly presented, we can make considerable progress with this subject.

Similarly we have been stressing (Automobile) Driver Education Training Courses in high schools in conjunction with the Rural Health Council of Alabama. Several women's organizations from over the state have been contacted by members of the Auxiliary's Committee on Rural Health to help publicize and endorse this program. We have invariably received a surprisingly enthusiastic response. Through these contacts the Inter-Club Council Safety Committee in Birmingham has asked that a representative from the Medical Association or an Auxiliary member speak to this group on March 20 about this subject.



To show what perseverance and determination can do with our Health Careers, Chairman Mrs. James Guin reported the following incident concerning this project. In October of this school year in a county high school where 1,800 students were enrolled, she found that only five girls had shown interest in the Future Nurses Club. The school nurse advised her that she did not think the club worthwhile with only five girls interested. Mrs. Guin (Kay) suggested that they try to organize a Health Careers Club to include both boys and girls who were interested in a health career. The result: The first day 37 students enrolled. The membership now is more than 50 and continues to grow.

In this manner and in many other ways, we are demonstrating to the laity that we are endeavoring to work *with* them and *for* them. We are convinced too that this is good public relations, thus executing the aims and purposes for which we were organized.

Vicki Cunningham

President, WAMASA

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

May 1962

No. 11

The Philosophy Of Rehabilitation

HOWARD A. RUSK, M. D.

New York City, New York

I am honored to have been invited to the tenth annual scientific meeting of the Alabama Chapter of the American College of Surgeons to talk with you about mutual problems in surgery and rehabilitation. I am particularly happy to be in Tuscaloosa as guest of my old Air Force colleague and friend, Dr. Charles Abbott. I, too, am happy to be in Alabama to pay tribute to your senior Senator, Senator Lister Hill, who I feel has done more to promote health and health research in the United States than anyone in government today. It is in no small measure due to Senator Lister Hill's continuing belief and support that I can present to you the development of medical rehabilitation as detailed in this paper.

Dr. Rusk is professor and chairman, department of physical medicine and rehabilitation, New York University Medical Center; Associate Editor, The NEW YORK TIMES; and president, World Rehabilitation Fund.

Presented at the tenth scientific meeting of the Alabama Chapter, American College of Surgeons, Tuscaloosa, Alabama, January 19, 1962.

One of the greatest advances that has been made by medicine and surgery in the past two decades is the new acceptance of a third dimension of medical and surgical responsibility—rehabilitation.

Rehabilitation has frequently been termed the "third phase of medicine," following "preventive medicine" and "curative medicine and surgery."

It is that period when the "fever is down and the stitches are out," the period "between the bed and the job." In contrast to "convalescence," in which the patient is left alone to let nature and time take their course, rehabilitation is a dynamic concept in which the skills of the rehabilitation team consisting of physician, physical therapists, occupational therapists, nurses, social workers, counselors and other trained personnel are integrated as a single force to assist the patient in reaching the maximum of his physical, emotional and social and vocational potentials.

The first objective of rehabilitation is to eliminate the physical disability if that is pos-

sible; the second, to reduce or alleviate the disability to the greatest extent possible; and the third, to retrain the person with a residual physical disability "to live and to work within the limits of his disability but to the hilt of his capabilities."

Much of our scientific rationale in the modern concepts of rehabilitation had its genesis in World War II, for it was during this period that medicine in the United States began to deal with the influence of disease upon the individual in terms of its economic, vocational, social, and personal effects. In our search for new drugs, diagnostic procedures, surgical techniques, and laboratory methods, we have overlooked too frequently the extraphysical results of illness—the changes it creates in the mind and in the habits of the patient as well as in his body.

During the hospital stay the average patient suffers 10 per cent of the time from pain and 90 per cent of the time from boredom. This is equally true in both civilian and military hospitals. However, it is more devastating in the latter, for there is less time to waste in war than in peace. The realization that wasted time could be converted into purposeful activity by a well-integrated rehabilitation program with equal emphasis on physical reconditioning, psychological readjustment and avocational training, led to the establishment of special convalescent hospitals by the United States Army Air Force in 1943. These hospitals treated men, not diseases. Their purpose was to provide the combat soldier with a laboratory of opportunity where he might regain not only health but the attitudes, habits, and values compatible with the normal behavior patterns that war had disrupted and distorted.

The hospital staff was enlarged to include not only medical specialists, but physical therapists, educators, athletic trainers, occupational therapists, social service workers, personal counselors, and vocational guidance experts who worked as a team to treat the needs of the "whole man." The captain of the team was the personal physician or "family doctor" to whom each patient was as-

signed on entering the hospital and to whom he could go with any problem, no matter what its nature.

With the aid of this highly qualified and diversified hospital staff, a broad program of rehabilitation was put into operation, with the result that the hospital was transformed into a combination schoolroom, gymnasium, machine shop, psychiatric clinic, vocational guidance center, and town hall.

Physical reconditioning was begun the moment acute illness or surgery terminated and, through a progressive and graduated program of calisthenics, active recreation, and competitive team play, patients were able to reach the peak of physical fitness during the convalescent period.

Some of the pertinent observations made on the results of the Convalescent Training Program after three years of experience were that: hospitalization time was shortened, hospital readmissions were reduced, sick leaves were eliminated except in extraordinary cases, and the morale of the soldier-patients was immeasurably improved when they were kept busy and interested in purposeful activity.

A number of interesting clinical studies were made. A. C. Van Ravenswaay¹ studied 645 cases of virus pneumonia treated in the same "acute" ward. These cases were later assigned to alternate convalescent wards. In Ward I nature was allowed to take its course, so to speak, and men sat around until they themselves and the medical officer felt they were ready for duty. In Ward II the patients were kept in bed until their sedimentation rates reached 10 mm. in one half hour, and then were started on a reconditioning program beginning with exercise for one half hour the first day and increasing progressively until the twelfth day, when the patient was participating in a full 5-hour day of physical training, mass games, competitive sports, and active recreation, including a 10-mile hike. Group I averaged 45 days hospitalization with a 30 per cent recurrence rate. The patients in Group II averaged only 31 days with but a 3 per cent recurrence rate.

Peter Karpovich² studied a similar group of two hundred aviation cadets convalescing from virus pneumonia at the School of Aviation Medicine, San Antonio, Texas. Using a modification of the Harvard Step Test and starting as early as the first afebrile day, Karpovich found that, by the reactions to this test, it was possible to determine, with some degree of accuracy, the patient's ability to participate in an active convalescent program. An interesting by-product of Karpovich's work was the observation that patients undergoing the tests required five days' less hospitalization time than those participating in the general program. These findings suggest that the convalescent may be able to participate in an even more active program with beneficial results.

Early in the operation of the convalescent program it was noted clinically that orthopedic patients requiring fixation of a specific member, if kept in top physical condition generally, did not show the usual degree of muscular atrophy in the fixed part and, when the cast was removed, could be reconditioned to duty in approximately one half the usual convalescent time. Whether this was due to increased blood velocity, exercise within the cast, vasomotor stimulation, or lack of capillary loss is a question that demands further investigation.

As a part of the United States Army Air Force Rheumatic Fever Control Program, Karpovich and others carried out a study on the testing of physical fitness and the physical training of convalescent rheumatic fever patients.³ Because of the chronic, recurrent nature of the disease and the possibility of disabling cardiac sequelae, it was felt that special emphasis should be placed on the standardization of physical activity and convalescent training of these patients. This was done by working out a series of graduated physical fitness tests that could be used in conjunction with the usual clinical observations, to determine the rate at which the patient could safely be permitted to progress to increased physical activity. The details of this study are available in the original report; it is interesting to note that there were no re-

currences or untoward reactions in any patient participating in the study.

Reports on the effects of bed rest have been detailed in the literature⁴⁻⁷ and special studies have been made by Ancel Keys, University of Minnesota Medical School, Minneapolis, Minn. (personal communication), and David Barr.⁸ Reports on the effects of early ambulation in surgical patients have been made by John H. Powers,⁹ Allan Whipple,¹⁰ and many others, and their significant observations are most pertinent in evaluating the management of convalescence. More recent data on the effects of early ambulation are reported elsewhere in this monograph by David Gold and John H. Powers.

Early in 1945, it was recognized by the Baruch Committee on Physical Medicine, New York, N. Y., that much had been learned in the rehabilitation programs of the Armed Forces that would be of value in the care of physically and emotionally disabled civilians. A subcommittee on civilian rehabilitation centers was appointed to work out a simple basic blueprint that would translate war rehabilitation experience into its civilian applications.¹¹

In 1950 the Committee on Public Health Relations of the New York Academy of Medicine, New York, N. Y., issued a report on convalescence prepared by a special subcommittee,¹² which pointed out that up to that time convalescent care had never been more than a minor phase of the provision made by the city of New York for the medical care of the sick and injured who are its charges. The report indicated that, although nearly half of the hospital beds there are in municipal institutions, the city had never built or operated a convalescent hospital.

During these intervening 12 years, many advances have been made in definitive medical and surgical care and in rehabilitation. In general, however, this report's classification of convalescent institutions remains valid. It pointed out that the master plans for hospital and related facilities in New York, which were prepared by the Hospital Council of Greater New York, had defined the time

of convalescent care as beginning "early after the acute phase of illness or injury" and continuing "until complete recovery or rehabilitation has been attained." The plan recommended that one fourth of hospital beds (one bed per thousand of the population) in the city should be devoted to convalescence and rehabilitation.

In this same 1950 report, the committee classified convalescent institutions and care as: rest homes, general convalescent hospitals, rehabilitation centers, and home care. The validity of this estimate of the needs for convalescent and rehabilitation beds, which was made eight years ago, has been verified in subsequent studies and has led to development of the "Homestead" program of the New York City Department of Hospitals, which was officially launched in March, 1958. The Homestead program is a new concept concerning care of the chronically disabled based on the recognition that those patients usually called chronically ill and disabled are in reality two distinct groups of patients with different problems and different needs.¹³

The chronically ill are patients who require regular and continuing medical services of the type best provided only within a hospital. The chronically disabled, on the other hand, are those with permanent and often static disabilities who require medical and hospital services only occasionally. These latter patients, since they do not need as much care as actively ill patients, receive less attention in hospitals and inevitably feel neglected and rejected. The very nature of a hospital whose primary mission is to provide definitive care to the actively ill means that the basic needs of the chronically disabled—affection, emotional security, spiritual development, social contacts, opportunities for self-expression through creative activity, and the assurance of being regarded as an individual—often go unmet due to pressure on the staff to provide acute care first. Over and above this, the chronically disabled in hospitals are forced to live for months or years in an environment in which pain and suffering are a part of the daily routine.

To lessen the cost of the care of the chronically disabled and also to provide an environment and program more suited to their needs, the New York City Department of Hospitals is currently converting a number of wings of hospitals no longer needed for acute care into Homesteads, or public home infirmary beds. In these Homesteads emphasis is placed on the recreational, rehabilitation, social, and emotional needs of the chronically disabled residents, and only the necessary minimal medical and nursing services are provided. An important economic factor in this program is the more than 50 per cent reimbursement through the state and federal governments for this care, which costs about \$8.50 per patient per day in contrast to \$25.00 a day in the facilities of an acute general hospital.

The first Homestead, dedicated in March 1958, is a part of Goldwater Memorial Hospital, where a 90-bed unit has been in operation since August, 1957. This is now being expanded to 360 beds. It is expected that by late 1958 or early 1959 a total of 3500 Homestead beds will have been activated within the system of the New York City Department of Hospitals, which has more than 20,000 beds.

Development of the homestead concept goes back to 1953. At that time, through a special grant of the New York Foundation, New York, N. Y., a geriatrics rehabilitation service was started at Goldwater Memorial Hospital as a joint project of the New York University-Medical Center and the New York City Department of Hospitals.

Eli Ginzberg of the Department of Economics, Columbia University, New York, N. Y., had previously reported: "The municipal hospitals of the City of New York are overcrowded because they are unable to transfer chronic patients to other suitable facilities. This situation obtains even in Goldwater Memorial Hospital, which was established (1939) as a specialized hospital for the active treatment of patients with long-term illness but whose patient population has become increasingly composed of individuals requiring custodial care. . . ." ¹⁴

Ginzberg's conclusions were substantiated by a study in 1954,¹⁵ which showed that of 95 unselected custodial patients at Goldwater Memorial Hospital whose average age was 68.5 years, only 7 were felt to be in need of continued hospitalization, and 2 of these were considered questionable.

As a result of these findings another study, again financed by the New York Foundation, was undertaken to obtain a city-wide sampling of patients in municipal hospitals. This report,¹⁶ issued in 1956, stated that 1 of every 5 patients in the city's municipal general and chronic disease hospitals was there, not because he needed hospital services, but simply because he had no other place to go.

These patients suffered primarily from neurological conditions, cardiovascular diseases and arthritis. After completion of their intensive medical care and rehabilitation, they were still greatly restricted in activity. Some had no homes or relatives, and others were too disabled to return to a home environment. The combination of age and physical disability had brought these patients to a state of medical indigency that compelled their admission to city hospitals.

The results of the 1956 report have been further confirmed by a personal communication regarding another study recently conducted by the New York State Division of Housing, the purpose of which was to determine the feasibility of requirements for a housing program that would meet home-care needs of the aged. The immediate and continued care required by patients more than 65 years of age were surveyed on a typical day in 3 New York Municipal and 3 New York Voluntary hospitals. The conclusion is that 1 of every 5 patients over 65 in these hospitals could be discharged if adequate institutional or home facilities and services were available. The finding is identical with that of the Hospital Patient Survey.¹⁶

The concept of the Homestead program is an extension of the changes in our basic philosophy regarding convalescence and rehabilitation that have developed over the past

fifteen years. These changed concepts are based primarily on our increased ability to evaluate the functional capacities of patients physically, emotionally, socially, and vocationally, and then to develop realistic programs to meet their needs.

However, whether it be in wound healing or in recreational activities for the aged, the common factor of beneficent stress is present. In all these programs the passive concept of "convalescence" is being replaced by the more modern concept of dynamic, active rehabilitation built around not only the medical but also the emotional, social, and vocational needs of the patient.

To the surgeon, stress has always implied strain. In some instances stress with that connotation is to be avoided because of its physiological effects on the surgical procedure. In other instances, and for the same reason, it is to be encouraged. In his over-all consideration of the patient, however, the surgeon must think of beneficent stress as a therapeutic aid—as the adaptation and stimulation that culminates in the fulfillment of the goals and ambitions of the patient, which are the expression of his personality.

Man's achievement of his goals is intimately related to the stress point: if he does not use his full potential, he vegetates; if he goes from stress to strain, he breaks. When he is able either by himself or with proper guidance to find the perfect pitch or end point of his personal stress, his life can be a fully satisfactory and rewarding one.

It has recently been shown in a careful study of 250 patients with an average age of 63 who have had strokes of apoplexy that the severity of the stroke had no correlation with the success of rehabilitation. If the patient had work to do, a home to which he could go, and someone to love and who loved him, the results were good, regardless of the severity of the disability. Certainly this can be said of patients in surgical convalescence. The desire to live rather than to be merely alive is essential to the physical, emotional, and endocrinological factors so important in im-

munological and anabolic victories over degenerative processes.

In simple terms, it is the will to live, to work and to contribute that make for successful convalescence.

If any major attack is to be made on the problems of chronic disability, the general hospital and the individual practicing physician must be the focal points of the attack. It is only in doctors' offices and in general hospitals that such services can be brought to the patient at the earliest possible time and that the costly and damaging physical, emotional, social and vocational sequelae of the acute disease process or trauma may be alleviated or minimized.

Rehabilitation of the chronically ill and the chronically disabled is not just a series of restorative techniques—it is a philosophy of medical responsibility. Failure to assume this responsibility means to guarantee the continued deterioration of many less severely disabled persons until they, too, reach the severely disabled and totally dependent category. The neglect of disability in its early stages is far more costly than an early aggressive program of rehabilitation which restores the individual to the highest possible level of physical, economic, social and emotional self-sufficiency.

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Physiologic Cortisone-Glucose Tolerance Test

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Introduction

The diagnosis of diabetes mellitus is dependent, to a large degree, upon the findings of the glucose tolerance test.¹⁻⁵ Hence, the parameters of the physiologic range for this diagnostic procedure are of cardinal importance.

In an earlier publication⁶ attention was directed to the classical glucose tolerance test. The conclusion was drawn that, as one stiffens the requirements for health by insisting upon ever decreasing numbers of symptoms and signs, the spread for the physiologic glucose tolerance pattern continues to shrink.

This report is designed to study the physiologic limits for the Cortisone-glucose tolerance test under conditions similar to those

previously reported with the classical glucose tolerance pattern.⁶

Review of the Literature

Standards for the Cortisone-glucose tolerance pattern have already been published.^{7,8} The values have been largely derived from a study of relatives of known diabetics, patients with no known diabetic family history, obese diabetic individuals after weight loss, and women without a history of having delivered large babies. There seems general agreement that, if the blood glucose levels are above 160 at one hour and greater than 140 at two hours, the subject is suffering with diabetes mellitus. Further, there seems to be concurrence that if the two hour blood glucose determination falls between 110 and 120 mg. per cent, then a diagnosis of probable diabetes mellitus should be entertained.

Method of Investigation

One hundred and thirty-five nondiabetic subjects with a negative family history for

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This investigation was supported in part by a traineeship grant (2G-15) from the epidemiology and biometry section, Public Health Service and (A-2899) the National Institute of Arthritis and Metabolic Diseases.

diabetes mellitus were studied by means of the Cortisone-glucose tolerance test.^{7,8} In addition, each of these individuals was questioned regarding a number of findings generally associated with diabetes mellitus. For example, each subject was scored with regard to polyphagia, polyuria, polydipsia, furunculosis, and weight change.⁹ Also, each person was studied in terms of several oral signs generally associated with a diabetic state (number of teeth and alveolar bone loss).¹⁰⁻¹⁷

Results

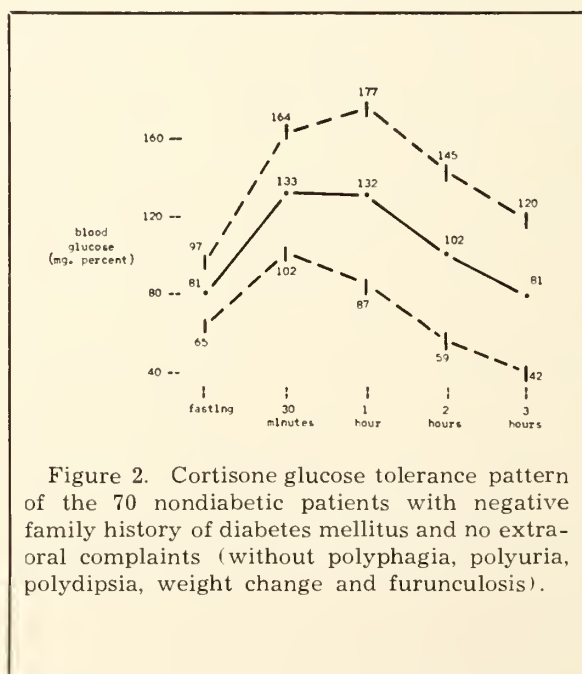
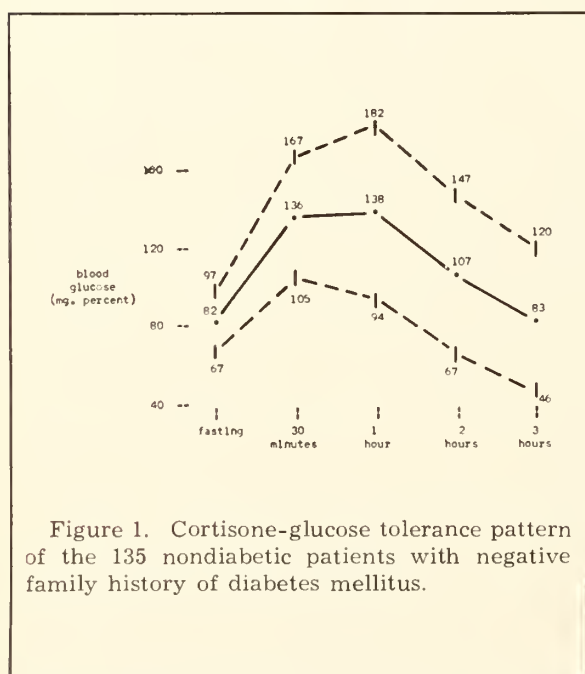
The mean values obtained fasting, thirty minutes, one hour, two hours, and three hours for the 135 nondiabetic subjects with a negative family history for diabetes mellitus are shown in Figure 1. This graph also includes the standard deviation values at each of the temporal points. There are several features about this glucose tolerance pattern which deserve particular mention. Firstly, the smallest range (in terms of standard deviation) is noted at the fasting level (67-97 mg. per cent). Secondly, the recommendations for the physiologic range at the fasting level presently being used are quite consistent

with the observations observed in this experiment.^{7,8} Specifically, it is said that fasting blood glucose should extend within the range of 60-100 mg. per cent. Figure 1 shows that the mean and one standard deviation at the fasting level covers that spread. Finally, on a mean basis, the one- and two-hour values do not exceed 160 and 120 mg. per cent respectively. Thus, as a group, the individuals comprising Figure 1 would be regarded as nondiabetic.

The assumption is made, in the publications which have set standards for normality, that the absence of diabetes mellitus in the patient and no positive family history is practically all that is required to set standards.

There is no question that, all other factors being equal, persons without symptoms and signs are probably healthier, in terms of diabetes mellitus and other diseases, than those with symptoms and signs.¹⁸ Accordingly, it was thought interesting to develop the Cortisone-glucose tolerance patterns of subjects who report the absence of symptoms and signs generally regarded as characteristic of the diabetic state.

Figure 2 shows the mean values and the standard deviations obtained for the 70 of the 135 nondiabetic persons with a negative fami-



GLUCOSE TOLERANCE TEST

ly history of diabetes mellitus who also reported no polyphagia, polydipsia, polyuria, furunculosis, and weight change. Once again, it is clear that at every temporal point there is a range of values. For example, at the fasting level the lowest and highest values are 65 and 97 mg. per cent. It is noteworthy that at every temporal point the mean glucose values in Figure 2 have decreased somewhat from those previously reported in Figure 1, though the ranges are essentially the same.

The philosophy of a symptomless and sign-free individual was pursued by eliminating from the 70 subjects those with less than a full complement (28) of teeth. In other words, the Cortisone-glucose tolerance pattern was studied for the 27 nondiabetic individuals with a negative family history of diabetes mellitus and no extraoral complaints of polyphagia, polydipsia, polyuria, weight change, and furunculosis; and, in addition, no tooth loss. The scores are plotted in Figure 3. A comparison of these mean scores and those obtained earlier (Figures 1 and 2) show that the averages have all decreased slightly. A more detailed comparison indicates that the ranges have decreased considerably. In other words, nondiabetic subjects with a negative family history of diabetes mellitus and

without the presence of polyphagia, polyuria, polydipsia, furunculosis, and weight change and no tooth loss cluster more about the mean than previously observed in the other two groups.

Finally, Figure 4 is another attempt to stiffen the requirements for health by insisting that the participants in the development of Figure 4 be nondiabetic subjects with a negative family history of diabetes mellitus, no extraoral complaints of polyphagia, polyuria, polydipsia, weight change, and furunculosis; a full dental complement, and no alveolar bone loss. Careful study of Figure 4 shows that the means throughout continue to decrease slightly while the ranges shrink considerably.

It would have been interesting to continue this approach. Unfortunately, the sample in Figure 4 is only 8 subjects. However, it seems reasonable that if this analysis were pursued, the range would progressively narrow to a theoretical point. That this would never occur, from a practical standpoint, is due to the fact that there is always an experimental error in performing blood glucose measurements. Parenthetical mention should be made

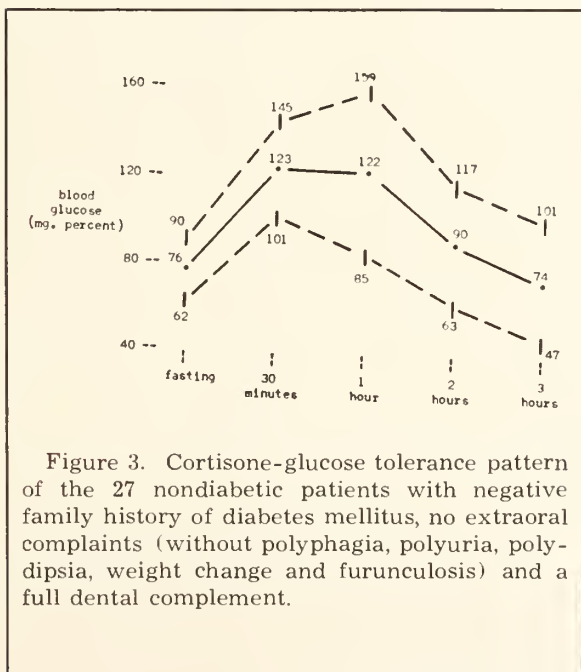


Figure 3. Cortisone-glucose tolerance pattern of the 27 nondiabetic patients with negative family history of diabetes mellitus, no extraoral complaints (without polyphagia, polyuria, polydipsia, weight change and furunculosis) and a full dental complement.

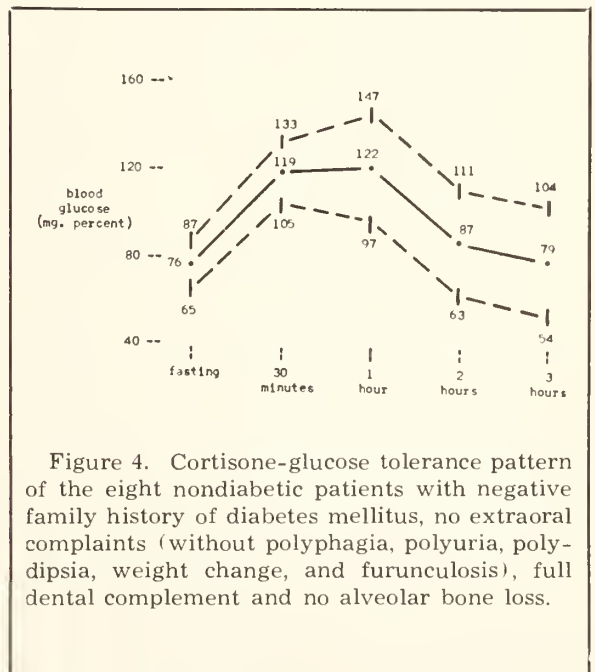


Figure 4. Cortisone-glucose tolerance pattern of the eight nondiabetic patients with negative family history of diabetes mellitus, no extraoral complaints (without polyphagia, polyuria, polydipsia, weight change, and furunculosis), full dental complement and no alveolar bone loss.

that, in this laboratory, the error for blood glucose is of the magnitude of 3 mg. per cent.

Summary

1. There is general agreement, by act if not by word, that the physiologic parameters of blood glucose are fairly well defined.
2. The present standards for blood glucose have been derived through statistical analyses of the blood glucose of presumably healthy individuals.
3. The evidence in this study shows that, by redefining health (stiffening the health requirements by insisting on progressively fewer symptoms and signs) the physiologic range for the Cortisone-glucose tolerance pattern progressively shrinks.
4. The findings in general reported here are quite consistent with the observations previously released with regard to the classical glucose tolerance test.⁶

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The Problem Of Prolonged Labor

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Maternal mortality statistics, local and national, continue a downward trend. This is a reward due the physician, generalist, and specialist alike. It is a tribute to the individual and combined efforts of American physicians in effectively combatting the three historically accepted major causes of maternal deaths: Hemorrhage, Infection, and Toxemia.

To emphasize this trend, figures from our own hospital can be quoted. Approximately 25 years ago in a survey that ended in 1933, the maternal mortality incidence was one maternal death in every 182 deliveries. Twenty per cent of these deaths were associated with

cesarean sections. Cesarean section was used as the last hope. It was performed after all other obstetrical "sleight of hand" procedures failed. Today, this hospital boasts a record of one death in approximately 11,000 deliveries. Recently, an embolic death ended an uneventful string of approximately 2,500 consecutive cesarean sections. This record is not an accident and it is not unusual in present day obstetrics in America. It reflects better physician preparation in medical schools and internships, it reflects a greater physician team effort and it indicates a more frequent and intelligent use of supportive measures. These statistics indicate the trend of progress through all of the United States, where during the past ten years, maternal deaths have dropped from 20/10,000 live births to 3/10,000 live births. Expressed in this manner, this number of maternal deaths seems insignificant. Why the hysteria? It means that upward of 2,000 women in the prime of life, 60 per cent, multipara with responsibilities of from one to 12 other children, are sacrificed each year.

Statistics still indicate the major causes of maternal deaths as hemorrhage, infection,

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Presented at the Medical Progress Assembly at the Tutwiler Hotel in Birmingham, Alabama, on September 19, 1961.

and toxemia with coincidental diseases sometimes pushing into first, second, or third position.

Both hemorrhage and infection point directly to trauma as the primary cause of their initiation, with the primary initiating cause of this trauma, 50 per cent of the instances related to prolonged labor.

The challenges, and the obligation, to the physician are: (1) to intelligently conduct the obstetrical case to prevent prolonged labor, and (2) avoid trauma.

From the time of the initial visit of an obstetrical patient to your office, and by your careful observations and intelligent decisions, you hold the obstetrical destiny, even the life, of this patient in the palm of your hand. This is as true of the grand multiparous patient as of the primigravida.

The state of multiparity does not assure uncomplicated prepartum, delivery, or postpartum periods. On the contrary, multiparity may result in complacency of physician or patient or both and add complications. Multiparity may actually be a hazard.

How then shall we pursue this problem?

Labor can only be considered as established when rhythmic contractions result in progressive effacement and dilatation of the cervix and, ultimately, in delivery of the baby. False labor—Braxton-Hicks contractions, rhythmic contractions without progress—are often erroneously considered in evaluating the length of labor.

Failure to recognize this definition and the possible existence of "false labor" can create complications. An abstracted case from a state maternal mortality survey is quoted. "A Gravida IV, Para III, had been in 'labor' for eight hours. The cervix was two centimeters dilated. (This is not an unusual state for a multiparous cervix in a patient not in labor.) The physician was dissatisfied with the progress and a sterile vaginal examination was done. (This is a commendable procedure when necessary and when intelligently done.) During this vaginal examination, the cervix was manually dilated to five centi-

meters. (Manual dilatation is manual laceration—a mutilating procedure that should never be done.) Single shot injections of increasing amounts of Pitocin® were administered until 64 minims were given (enough to propel the infant through the navel). Although contractions increased, the physician was dissatisfied and a second sterile vaginal examination was done. This time the cervix was further dilated to completeness, the membranes were ruptured, and a version and extraction performed. A stillborn infant was delivered. This was followed by the placenta and profuse hemorrhage. The patient expired."

It is unnecessary to explain that this extraordinary collection of an accumulation of episodes of faulty judgment and faulty procedures resulted in a death producing ruptured uterus. It is necessary to return to the original question: Was this patient in labor when these procedures were started? It is essential that the clinician recognize labor. Many unnecessary cesarean sections and traumatic deliveries could be avoided if this question were answered before instituting active intervention.

What is prolonged labor?

There is a variety of opinions among all obstetricians. These opinions vary from Greenhill who designated 18 hours in the primigravida to indicate prolonged labor to Calkins who varied his time limits with the conditions of the case and indicated the usual instance of prolonged labor to be 19 hours, with variations up to 24 and even 30 hours. He stated that hazard to mother and infant is not usual at 24 hours, but is a reality after 30 hours. It is necessary to emphasize that for some patients, any marked disproportion or faulty presentation, the extent of any labor, is prolonged labor. It has been our concept that the primigravida will deliver between 12 to 20 hours. Multigravidas can be expected to deliver in eight to 12 hours. Labor is considered prolonged at Milwaukee Hospital after 20 hours. A labor of 20 hours duration is considered the time for action unless clinically indicated earlier.

Incidence

The incidence of prolonged labor varies in different institutions. This incidence varies because of various time definitions. Incidences vary from 8.4 per cent of labor over 24 hours, reported by Daro and Gallin of Cook County, to an incidence of 1.42 per cent of labors over 24 hours as reported by Gainey. The statistics of Milwaukee Hospital were reviewed for the year 1959 as a spot check. A total of 2,413 infants were delivered. Of these, 30 (1.24 per cent) had labor over 20 hours, with 16 (0.66 per cent) over 24 hours. There were eight sections. Twenty-six per cent of prolonged labor cases were sectioned as compared to an overall five per cent section rate. Six of these sections were done in patients who were in labor over 31 hours. The longest labor recorded in this group was 48 hours. One of the sections was in a breech. Breech was a factor in prolonged labor six times, 20 per cent. All of these patients were primigravidas except three. The ages ranged from 16 to 44 years.

Prevention of Prolonged Labor

The prevention of prolonged labor must begin during the prenatal period. Exacting prenatal care has emphasized its value in combatting toxemia. However, exacting intelligently conducted prenatal care has a much more inclusive effect on the entire obstetrical experience of women.

Chancing the possibility of being considered elementary, it is necessary to state that the essential component of this prenatal care is the combination of an accurate history and a complete physical evaluation of the woman. Knowledge of hereditary tendencies or of existing abnormalities coincidental to the pregnancy are essential to the successful delivery of a living infant and the salvage of the mother. The habit of exacting history and physical, fundamental in all branches of medicine, is just as essential in evaluating the obstetrical patient. Continued accurate care and intelligent observation during this impor-

tant prenatal period will result in detection of conditions which may indicate the possibility of prolonged labor and often preclude vaginal delivery. This observation must include careful evaluation of pelvic capacity, attempted estimation of fetal size, and determination of fetal presentation. Near term, if routine evaluation indicates a failure of the presenting part to engage, or if there is indication of malformation or malposition, it is advisable to obtain an X-ray examination. Actual measurements of fetal head as compared to pelvic inlet, midplane and outlet are possible. X-ray should be used where clinical examination indicates the suspicion of midplane contraction. Prolonged labor with its hazards as a result of undetected, undiagnosed midplane contraction will result in far greater damage to an infant than intelligently requested, expertly done X-ray evaluation at or near term. X-ray should be avoided in first and second trimesters. Let us wisely and without hysteria consider and use X-ray—this very valuable adjunct to the successful practice of almost all branches of medicine. But, let us remember also that X-ray techniques and interpretations are no better or safer than the man or woman behind the X-ray. All have attended the patient who has been doomed to section by X-ray interpretation, only to have had her deliver precipitously and most unexpectedly. All have attended the other patient who, as prognosticated by X-ray, was expected to deliver “in a breeze.” This patient would still be laboring if repeated clinical examination and consultation had not pointed to the necessity of cesarean section.

The detection of obstructing tumors of the birth canal can only be accomplished by instituting routine re-evaluation of the pelvis by carefully done vaginal examinations at the fourth and seventh month and again near term. This will prevent the catastrophe of surprise and eliminate the torture of suffering through prolonged, dangerous, unproductive labor, the result of an obstructing fibroid or ovarian tumor. Remember, there is no rule which outlaws a carefully done vaginal examination regardless of the period of gestation.

There are, however, many strong supportive arguments to uphold these examinations.

The patient must be placed on the table and examined at each visit so that progress of increased fetal size can be noted and the fetal heart can be checked. Careful abdominal palpation (Leopold's Maneuvers) will reveal errors of lie or presentation. Additional evaluation of the patient by rectal examinations during the last six visits will aid in the detection of abnormalities including the problem of the anencephalic or hydrocephalic infant. These detected abnormalities, if known, can be conquered and hazards to mothers and infants greatly reduced. Cosgrove stated that these detectable abnormalities accounted for 57.5 per cent of the causes of prolonged labor in a series from his institution. It is safe to assume that, conservatively estimated, cephalopelvic disproportion and the existence of faulty lie is a factor in 20 per cent of the instances of prolonged labor. In the reported series of prolonged labor at Milwaukee Hospital, breech existed six times, an incidence of 20 per cent. Though recognized as a factor in three per cent of all obstetrical cases, breech occupied this prominent place in prolonged labor cases. If disproportion and faulty lie are discovered prenatally, prolonged labor can be anticipated and avoided by appropriate methods of delivery. Many unproductive prolonged labors which eventually terminated in cesarean section or fetal wastage, after prolonged trial and failure, could have been avoided by earlier intervention.

Another valuable weapon in the continued fight against the menace of prolonged labor is a proper personal introduction to your patient and an attempt at adequate psychological conditioning of this patient during the prenatal period. With an adequate and accurate history and physical as described, the seed of confidence will be planted by the initial impression you make with your patient. It will grow into her recognition of full security in your care and judgment. A poor impression, the result of inadequate ex-

amination, evaluation and explanation, will create insecurity and can result in a running battle of challenging questions and a continuous debate throughout the prenatal period.

Though the physician need not swing on the hysteria of so called natural childbirth, it is essential that he recognize the important contributions made toward relaxation of patient tensions by encouraging expectant mother and parent education. Part of this can be accomplished in the physician's office, part can be done in the many well organized parent classes which are a part of your hospitals and should be a part of every hospital caring for obstetrical patients. It is the physician's responsibility to direct attention to the many safeguards that have been developed in the past 20 years and the resultant progress made in America in the reduction of maternal mortality to an almost irreducible minimum.

The reduction of fetal wastage is also rapidly approaching this irreducible status as the result of prenatal and delivery care. It is essential that young American mothers be made aware of the persistent drive of the American obstetrical team, led by you, the American physician; which drive has resulted in the fact that America has been made the safest place in the world in which to conceive and deliver an infant. With this knowledge, with proper parent education, and with the assurance of good health, the expectant mother will advance to the labor and delivery room full of confidence and relaxed to face the contractions of labor and the tremendous experience of labor as a normal process. The result will be a relaxation, which will reduce requirements for analgesic and amnesiac medication. This reduction of medication removes a source of potential interference with the effectiveness of the labor mechanisms, and, finally, results in a reduction of the incidence of prolonged labor. It is our responsibility to be instrumental in removing the concept of pain and suffering as associated with the process of labor.

Labor and Delivery

When indications of impending labor present as indicated by a gush of water, a show of blood, an evidence of regular contractions or a combination of any two or all three, your patient should not panic. She knows what to expect. She has been instructed to call you or your designated associate, day or night, for assurance and direction. She enters the hospital with confidence and, it is our hope that this will further be increased by the kind and considerate assistance of the registration personnel, the labor and delivery room staff of nurses, and physicians. You, the physician, have the confidence of knowing that many of the problems of gross deformity and abnormalities have been detected and eliminated through your adequate prenatal care. The result, labor can progress and be intelligently observed.

After it has been established that actual labor exists, you may expect the primigravida to deliver in 12 to 20 hours. You know that from one to 1.5 per cent of your cases will labor over 20 hours. This knowledge should create an alertness which will prepare you for the prolonged case when it occurs. Once admitted to the hospital, the patient must not be forgotten due to the business activity of the day or the social activity of the night. Inquiries and visits should be regular and not made as an afterthought. You should be especially alert when attending patients with dyskinetic labors, where breech exists, when premature rupture of membranes exists associated with a long, unprepared cervix, or where malpositions exist.

When labor reaches the hour of decision, the 20 hour period, the time which is designated as the warning signal, what is the course? Certainly, this does not mean the patient must be delivered because an arbitrarily set dangerous time limit has been reached. It does mean that if delivery is not imminent, the red flare of danger has been ignited, indicating the necessity for a complete patient and progress re-evaluation.

This re-evaluation should be systematic. It should include a review of the patient's labor record up to the time of concern. The intake and output of the patient should be examined and the state of hydration noted. Fluids adequate to establish hydration and nutrition should be given. The character of the contractions should be evaluated. The amount of sedation which has been administered should be determined. A careful sterile vaginal examination should be done to detect problems of position or presentation and definitely establish the degree of dilatation. The character, rate, and quality of the fetal heart tones must be checked often. If the membranes are intact, amniotomy may be indicated. Ineffectual labors have converted to productive labors in short order after the rupturing of the membranes. This is a safe and recommended procedure if the presenting part is engaged and if the presentation is cephalic. At this time indications may point to the necessity of X-ray evaluation.

When indicated, the patient should be X-rayed. X-ray may reveal the elusive mid-plane contraction or a straight sacrum, or both. It may disclose malformation or disproportion, or confirm abnormal position. This re-evaluation will be incomplete unless the opinion of another physician consultant, impartial and unrelated to the problem case, is requested. The impact of consultation can be great. The consultation may result in the opinion to further adjust fluid balance, to rest the patient and later stimulate and reactivate labor with intravenous drip Pitocin,[®] or to actively intervene. Consultation may eliminate the hysterical confusion resulting from indecision—indecision resulting from pressure of patient's family—indecision resulting from pressure due to the physician's own commitments. These pressures, or apparent obligations, may result in the injudicious use of such procedures as version and extraction which has only limited indications; Dürchen's incisions, which can create lasting cervical defects, unless accurately made and

accurately repaired; and injudicious traumatic forcep applications and deliveries.

Be aware of the hazards and recognize your responsibilities when Pitocin® or Syntocinon® are used. Figure II reads that danger may exist for the primigravida and multi-gravida (especially the aging grand multi-gravida) with administration of stimulation, for stimulation may result in rupture of the repeatedly traumatized lower uterine segment. The patient's personal response to the stimulation may be such that titanic contractions will result. This creates great hazard to the infant and can also result in precipitous expulsion of fetus with resultant extensive vaginal, cervical and/or uterine lacerations. When Pitocin® is administered, adequate and continuous nursing care and resident or staff supervision is mandatory. It is the physician's responsibility to be available or have a designated professional representative available in the hospital to cope with any emergency and to avoid catastrophe which

can result when oxytoxics are administered.

It is essential to remember that statistics indicate 30 hours as the time of hazard. After 30 hours of labor, there is progressive hazard to both mother and infant. Probably after 30 hours, we are stepping from prolonged labor to neglected labor. If re-evaluation has occurred at 20 hours and progress has not been satisfactory after rest and hydration, the mode of attack should be cesarean section. Antibiotics will have been started by 20 hours regardless of ruptured or intact membranes. It is recognized that after 12 hours of active labor, positive cultures can be obtained from the amniotic fluid even when membranes are intact.

With careful, intelligent, and accurate observation and care, the outcome should be excellent.

The time is at hand when we must recognize the necessity of an intelligent approach based upon careful evaluation. We must cast

Figure 1. Beware of Fatal Forceps.



Figure 2. The reward of the injudicious use of pitocin.



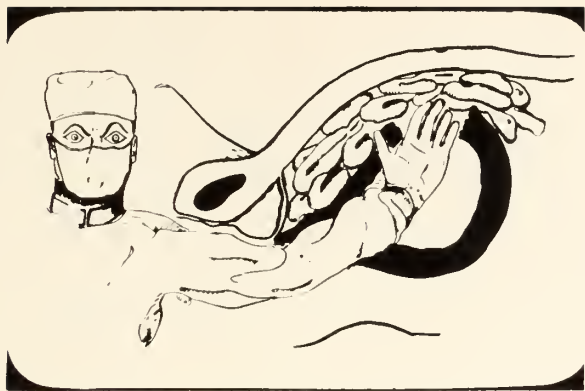


Figure 3. Use caution! Don't be surprised when intrauterine examination is done.



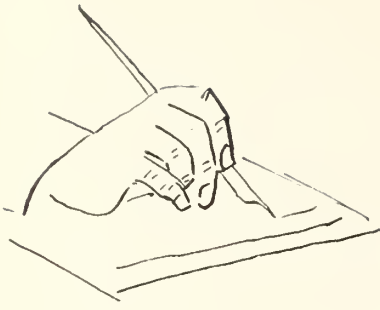
Figure 4. Be prepared with blood. Use care so that it will be needed rarely.

aside antiquated methods of obstetrical gymnastic procedures and obstetrical tricks for section. It is time to disregard some arbitrary statistical ceiling which has been established to regulate our judgment when confronted by the decision to perform a cesarean section. Poor results by section, for mother and infant, will increase in direct proportion as length of labor increases beyond 30 hours. This should not mean that we are to set aside caution, policy, and indications for convenience. Sections still are associated with every hazard of major surgery. If done when indicated, the overall section rate will not go beyond five or five and one-half per cent and many infants will be salvaged.

The pattern of a patient's future childbearing, indeed the question of whether she will ever conceive again, may depend upon the conduct of her labor and the memory of her delivery experience. Make it a gratifying experience!

Summary and Conclusion

An attempt has been made to indicate the necessity for persistent effort by the obstetrician to combat the entity of prolonged labor. This must start in the prenatal period by complete examination, evaluation and care, and by instilling within the patient confidence in her physician. The patient who is informed and who has confidence will have a shorter, easier labor. I would admonish you, however, that complacency on the part of the physician and/or patient, because of the tendency to emphasize ease and naturalness, must never be permitted to replace intelligent care by a physician well trained to observe, care for, and actively intervene surgically when indicated instead of using antiquated obstetrical tricks. The total practice of obstetrics is major surgery. When least expected, complications requiring surgical skill may occur. A fleeting short moment may result in the elimination of a life because of faulty judgment or the use of a faulty procedure.



Editorials

GOOD WILL IN ACTION

Military physicians from Turkey, Japan, Free China, Pakistan, South Vietnam, Laos, and other allied countries come to Maxwell Air Force Base throughout the year for special short-term courses.

The Air Force, wanting to give the visiting physicians a better understanding and a truer picture of the American way-of-life, asked the Montgomery County Medical Society to participate in a "good neighbor" plan.

The usual party, invitations to society and hospital meetings were discarded in favor of a plan whereby members of the Society would sponsor one or more foreign doctors during their stay at Maxwell.

Under this plan, a member wishing to sponsor a visitor would notify the Air Force and in turn would receive a picture and description of the guest, along with geographic, socio-economic, and background information. After reviewing the material the sponsor could either accept or decline his sponsorship.

Sponsorship required only a few hours a week from one to three weeks. Some sponsors elected to take his fellow colleague to local hospitals, others to shopping centers and especially the supermarket; and some invited them to their homes for a typical evening meal. But in all cases the emphasis was on a person-to-person relationship.

All of the foreign physicians encountered were well educated, very genteel, and appreciative. Each spoke some English, while the grammar of some put the host to shame.

Reactions from this plan have come from three sources: The Air Force, the sponsors, and the visitors.

The Air Force was pleased and would like to place even more foreign physicians with suitable sponsors.

The sponsors were very pleased. Not one has been heard to voice anything but satisfaction.

The following letters speak for the visitors.

Dear Dr. William B. Virgin:

I am sorry to you. Truly my letter is late because I suffered by weakness of my body condition. It first time. I am glad when I was received your letter.

How do you do?

I know through my husband letter about you and your family life, so I thought very peaceable home.

We are married on last year spring, so at now, I have two months baby, so I send interesting time by my beautiful baby.

I future, I want to go your country and at

that time I want to meet you and your family.

Once more I'm fine thank you. I hear through my husband that you are very kindly to help for my husband.

I wish to see you and your family picture.

I want to come news of you and your family.

I pray to God for peace of your family.

Sincerely

Korean physician's wife

Dear Dr. Virgin:

I am very much glad to say that I had arrived here, Brooks AFB, without any trouble during the travel. I had spent the first night, after leaving there, at a army base in New Olence, and second night at Elington AFB in Houston, and arrived here on February 4th evening.

I am sure, first of all I must thanks to our God, and to you for your good many advice for traveling.

Actually I can say that I had learned a lot of humanity by you and your family at there, and that I had had many nice time through the kindness of you. And I am very much appreciate again now.

I like to say thanks to Dr. Hubbard and his wife too.

I will start study of Aviation Medicine from next Monday till April 13th, 1962 at here. And will go to Keesler AFB thereafter. I can promise that I will write letters hereafter occasionally. And I will never forget your many good advices, and your generous smiling too.

I will pray for you, your wife and your beautiful two daughters and son to have good health and good fortune forever.

Korean physician

Dear Mrs. and Dr. Virgin:

I arrived at Brooks AFB Sunday after 24 hours train travel. The trip was not bad, even rather comfortable, for I could sleep a total of maybe ten hours. As long as it was daylight I kept my eyes wide open to see as much as possible of the Country, but it got dark before we reached New Orleans.

This is my third day in Brooks, and I regret leaving Maxwell and Montgomery so soon. I didn't need to because the course will not begin until the 12th this month. The base is located on the desert, and San Antonio is maybe larger but not as friendly as Montgomery. Now already I miss you all. How I enjoyed the evenings with you! They made me forget that I was far from home, far from my family.

I just finished a letter to my wife, and I told about you. And I wrote her to send a real good batik, because the one I gave you was not the best, not good enough for you.

Mrs. Virgin, if you are going to send my wife something, let me help you. She would love things she can wear: a blouse or a dress, or those colorful (plastic) ear ornaments and necklaces. Her measurements are: bust 34 and waist 28. She is about as tall as Ginger, is fair skinned. As she is spending much of her time with her parents, it would be better to mail to their address, with a message inside. (This will also minimize the risk of getting lost because of delayed claiming.) Her father's address is: Dr. M. Soerjatin, Djalan Argopuro 29, Semarang, Indonesia. (My father-in-law is an ophthalmologist.)

So long then, dear Mrs. and Mr. Sponsor, I look forward to receiving a letter from you. And my greetings to Ginger and Betty.

Yours faithfully,

Indonesian physician

LEDERLE SYMPOSIUM

Tumors in infants and children, the second leading cause of death in the childhood age group, will be the theme of a one-day symposium that will be presented by The Children's Hospital at the Tutwiler Hotel on Saturday, June 2.

The program will be co-sponsored by the Alabama Chapter of the American Academy of Pediatrics and the Alabama Academy of General Practice, according to Dr. Harry Shirkey, director of the hospital.

Dr. Shirkey has arranged an outstanding program that will feature lectures by Dr. Benjamin Landing, director of pathology of The Children's Hospital in Los Angeles, who will discuss "The Pathology of Tumors in Children"; Dr. Lester W. Martin, director of surgery, Children's Hospital and Research Foundation in Cincinnati, will speak on "Surgery in Pediatric Tumors"; Dr. Lois Murphy, associate professor of pediatrics at Cornell University Medical Center in New York City, will lecture on "Chemotherapy of Tumors in Childhood"; Dr. Howard E. Skipper, professor of experimental pathology, associate director of Southern Research Institute, will outline "The Present Status of Experimental Cancer Chemotherapy"; Dr. Leonard Robinson, professor of dentistry and associate professor of pathology at Medical College of Alabama, will report on "Primary Neoplasms of Oral and Para-Oral Tissues in Children."

There will be question and answer periods following both the morning and afternoon sessions. Dr. Marshall R. Pitts, pediatric surgeon of The Children's Hospital in Birmingham, and Dr. Stephan D. Palmer, director of the Hospital's hematology services, will outline the facilities the Hospital has for diagnosing and treating childhood tumors.

DIABETES MELLITUS

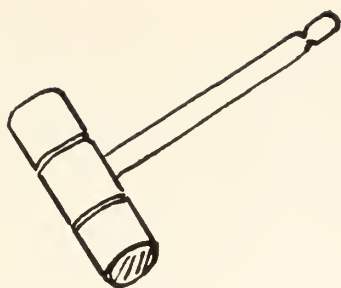
All physicians, regardless of their type of practice, should be concerned with diabetes mellitus because of its prevalence and chronicity. An essential part of treating the condition is teaching the patient how to live with it.

As in any educational program, a systematic approach should be used. Each physician should have certain specific objectives clearly in mind as he teaches his diabetic patients.

To aid him, the American Diabetes Association has prepared the following check list of nine basic elements of treatment, which constitutes a minimum program for diabetes management.

1. Diet
2. Urine testing
3. Action of insulin and other hypoglycemic agents
4. Technique of insulin injection and sites for it
5. Care of syringe and of insulin
6. Symptoms of hypoglycemia
7. Symptoms of uncontrolled diabetes
8. Care of the feet
9. What to do in case of acute complications.

This guide is not only of value in the initial education of a new diabetic, but can also be most helpful to both patient and physician in the subsequent years of management.



President's Page



IS THE PHYSICIAN MASTER OF HIS DESTINY?

Your answer to this question will depend, interestingly enough, upon a thorough evaluation and a meaningful understanding of the changes in our way of life during the last three decades. You are aware of the impact on medicine of such major events as World War II, the Korean War, the rise of the labor unions under President Roosevelt, the collapse of the western European nations, the rise of the Soviet Union to a world power, and the increasing tide of Communism and Socialism (which are indistinguishable to many) in our government.

During this same interval many scientific achievements were observed in the broad field of medicine, such as the discovery of antibiotics and poliomyelitis vaccine.

The voluntary health insurance movement, which started in the early thirties, and the passage of the Social Security Act (1935) have been important milestones affecting the socio-economic philosophy of the American people.

The modifications in the practice of medicine might possibly be divided into two categories:

1. Changes which have occurred due to the actions of physicians, either indi-

vidually or by medical associations on a county, state, or national level.

2. Modifications principally due to "third party" groups over which the medical profession has no actual control but in many instances may have a "sphere of influence."

In the early thirties there were very few restrictions in so far as hospitals, medical societies, and other groups were concerned. Medical staffs were poorly organized; Executive Committees (medical staffs) were ineffective, if they existed; surgical and tissue committees were unheard of; and very few problems were encountered, relatively speaking. In that era the medical society was the guardian of ethics, and their efforts were laudable if ineffective. Those who believed in increasing the quality of medical care realized that this could only be done through the concerted efforts of the medical society and medical staff of the hospital. Their actions placed increased restrictions and responsibilities on the physician practicing the healing arts. In more recent years the examining boards for the specialty groups, as well as Hospital Accreditation Boards, have

been effective in improving the quality of medical care.

The Third Party Phase

The second major category might well be known as the influences on medical practice which have been forced, or partially forced, on practitioners by "third parties." These third parties are not necessarily good or bad, but they exert a definite influence over the manner in which the health dollar is spent. These socio-economic groups, because of the nature of their business or because of their social political welfare philosophy, command a position of authority which has a definite bearing, possibly too much so, on the economics of medicine.

Blue Cross was one of the earlier non-profit organizations which developed prepayment plans for hospital services. This was closely followed by the Blue Shield plan which was a prepayment plan for physicians' services, chiefly surgical. The medical profession has supported and implemented these plans all over the nation.

The commercial insurance companies have developed many excellent contracts, particularly major medical (with deductibles and participating features) which are less vulnerable to abuse.

Now labor unions and big business are intensely interested in low cost national plans for complete coverage of hospital services as well as physicians' services. The PROFESSIONAL SERVICES INDEX which has been released by the National Association of Blue

Shield Plans is "an index of relationships and does not in any sense constitute a prepaid medical care contract." This index will certainly tend to rationalize the costs of the various medical services. Whether or not this will be helpful is debatable.

The increase in welfare payments over the last decade and the indigent hospital care program in various states have left their imprint. The Kerr-Mills Act was a compromise which was supported by the medical profession. Kerr-Mills, with more adequate financial support, will offer considerable help to those individuals (65 and over) not on welfare but who cannot financially afford a catastrophic illness.

The socialists, the political opportunists, the labor unions, as well as Welfare Departments in almost every state are making unusual efforts to establish compulsory health care for senior citizens under the social security system. The passage of the King-Anderson Bill (H. R. 4222) would establish the principle of compulsory health care paid for by the federal government, which would be socialized medicine for a limited age group and would eventually lead to the complete socialization of medicine.

Now let us go back to the original question—IS THE PHYSICIAN MASTER OF HIS OWN DESTINY?

What is your answer? Are you prepared to meet the challenge?

H. Vaun Adams
President



ORGANIZATION SECTION



M. Vaun Adams, M. D.
Mobile
President of The Association

Dr. M. Vaun Adams, a well-known Mobile pediatrician, was elevated to the presidency of the Medical Association of the State of Alabama at the closing of the Association's 101st annual meeting in Birmingham on April 28.

The new president is a native of Alabama, born in Talladega as the son of Dr. and Mrs. John Thomas Adams.

He was educated at Virginia Military Institute and received his A. B. and M. A. degrees from the University of Alabama. He is a graduate of the University of Pennsylvania School of Medicine and served his internships at Oncologic Hospital, Philadelphia; Employee's Hospital, Fairfield; Children's Hos-

pital, Cincinnati; and Willard Parker Hospital, New York City.

Dr. Adams has engaged in the private practice of pediatrics in Mobile since 1931 and is a member of the staff of the Mobile Infirmary, Providence Hospital, and Mobile General Hospital. He was elected president of the Mobile County Medical Society in 1954.

He has served the State Association as Chairman of the Committee on Legislation, as Vice Chairman of the Public Relations Committee, and as delegate to the American Medical Association from 1958 to 1961.

Dr. Adams is a licentiate of the American Board of Pediatrics, member of the American Academy of Pediatrics, and a Fellow of the American College of Physicians. He is a

ORGANIZATION SECTION

member and former president of the Alabama Chapter of the American Academy of Pediatrics.

Dr. Adams is married to the former Florence Austin of Mobile. He has one daughter,

Anita Hope (now Mrs. Fred Lee Caver), the daughter of Dr. Adams and the late Leonora Hope Adams.

His hobbies include photography, fishing, boating, and the cultivation of camellias.



Mrs. John M. Kimmey
Auxiliary President

Mrs. John M. Kimmey of Elba was installed as president of the Woman's Auxiliary to the Medical Association of the State of Alabama on April 27 in Birmingham by Mrs. Harlan English, president of the Woman's Auxiliary to American Medical Association.

Mrs. Kimmey, the former Ida Anderson, is a graduate of Judson College of Marion, Alabama.

The new president has been active in Auxiliary work on both the state and county level. She has held every office of the Coffee County Auxiliary and has served the state auxiliary as vice-president, recording secre-

tary, auditor, and chairman of several committees.

In Elba she has been active in many health and civic organizations. She is past president of the Woman's Missionary Union of the First Baptist Church, the Elba Study Club, and the local P.T.A. She is a charter member of the local Azalea Garden Club and the Elba City Hospital Board.

Dr. and Mrs. Kimmey have one living son, James Anderson. He is married and has three children.

Mrs. Kimmey's hobbies are coin collecting, reading, rug hooking, and gardening.



ASSOCIATION FORUM

ANOTHER WAY TO DESTRUCTION

THURMAN SENSING

Nashville, Tennessee

Americans have always been willing to tax themselves sufficiently and spend whatever money is necessary in order to defend themselves militarily, if it is wisely and economically done. That attitude still holds good.

There is another way to destruction, however, besides military destruction; namely, economic destruction. We can be quite sure that once our economy is destroyed, our way of life will go right along with it—and that without a shot being fired. There is certainly no object in protecting ourselves from without if we are going to destroy ourselves from within.

Our national debt is already \$290 billion, a debt the like of which no nation on the face of this earth has ever known. The debt ceiling, which has been a farce for many years, was recently raised by Congress to \$298 billion. It is highly doubtful if that ceiling will last through this fiscal year.

We ended last fiscal year on June 30th with a budget deficit of \$3.9 billion. In his speech on the Berlin situation on July 25th, the President estimated a budget deficit of \$5.3 billion for the fiscal year ending next June 30th.

Yet in the face of all this, the President went on to say, in asking Congress for an additional \$3.5 billion for defense purposes, "The Secretary of the Treasury and other economic advisors assure me, however, that our economy has the capacity to bear this new request."

It is right at this point, no doubt, that Nikita Khrushchev is laughing up his sleeve. Anybody but an egghead economist knows that these additional expenses can not be added to our already overloaded budget without a mounting national debt, continued budget deficits, and unremitting inflation—and this is a sure road to ruin.

It would seem quite clear at this stage that

the President needs a new Secretary of the Treasury and different economic advisers if he is going to rely on such advice. How do they know our economy has any such capacity? Our federal government has lived beyond its means, has spent more than it has taken in, for 26 of the last 31 years; how many more years do they think this can keep up? What figure must the national debt reach before we wake up to find ourselves bankrupt? How much farther must the value of the dollar decline from its present 46c as compared with the 1939 dollar before our economy is destroyed? Continued traveling down this road—and if the spenders have their way it will be continued—is a much more certain way to destruction than the threat of the communists.

A solvent economy is comparable to guns in its importance to defense. So, if the nation must spend more money to defend itself militarily, then our government must correspondingly reduce its give-away programs and its socialistic welfare state expenditures—all of which should be stopped anyway.

Not one word, though, did the President say in his speech about reducing these expenditures. That is just not in accord with the New Frontier philosophy. In appealing for

his foreign aid bill recently—the abandonment of which would be a wonderful way to offset the need for increased expenditures—the President said he is *“less concerned about spending too much too often than too little too late.”* He undoubtedly feels that way; in fact, that statement very well points up the whole fault of the welfare state philosophy; namely, that its proponents are not the least bit concerned about spending too much. They never have been. And, of course, they assume unto themselves the omniscience to know beyond just what point we should go in order not to “spend too little too late.”

Many more ways could be mentioned to reduce other than defense expenditures—the agricultural price support program, federal aid to education, veterans benefits, public housing, urban renewal, peace corps, and a host of others. There is one thing sure—taxes are high enough; they should in no manner be increased until all welfare state expenditures are squeezed out of the budget.

The communists have always boasted they would force us to spend ourselves into destruction. Shall we continue to help them, as we have in so many recent years, make good on their boast?

C R E D O

CARL A. NORGREN

For 50 years I have put my thoughts in writing, expressing approval or protest, as the philosophical, economic, or political atmosphere of the moment may have prompted. Recently I had occasion to review many of these expressions. Although I was not always right, I was surprised at the consistency of my point of view. Out of curiosity, I began to inquire into the reasons why.

My thoughts quickly turned back to my childhood. My parents were Swedish immigrants. By the time I came along on the arid plains of South Dakota, they had become more dedicated Americans than most natural-born citizens, because they knew what they had gained as Americans and what they had left behind. This, together with a deep abiding religious faith, there simply were no doubts.

Their creed was simple. By precept and example their beliefs became mine. They are as follows:

1. I believe in the Golden Rule.
2. I believe in the Ten Commandments.
3. I believe in the Declaration of Independence.
4. I believe in the Preamble and the Constitution of the United States.
5. I believe that government is best which governs least.
6. I believe in the private enterprise system and all of the rewards, risks, and responsibilities attendant thereto.
7. I believe that the sole responsibility of the federal government towards the citizenship, beyond the specific constitu-

tional requirements, with respect to fiscal affairs, maintaining the peace, and other legal requirements of an integrated society, is to maintain a national and international climate in which the individual may prosper to whatever extent good fortune, enterprise, and intelligence will carry him.

8. I believe that the responsibility of the family for its old as well as its young is fundamental. Any extension of welfare beyond the family should be limited to the community or the state.

To my parents, these basic beliefs were as literal and unequivocal as God. I believe they have influenced my thinking always.

Although time is running out on me, I would not trade my lifespan for anything in the past, and certainly nothing that now appears as a potential in the future.

I was born into a life of total personal responsibility and self-reliance. The latter part of the 19th century were days of the horse and buggy. Communications were tedious and slow. For all practical purposes the world was confined to a ten-mile radius.

In these last 70 years we have passed from the completely integrated family farm and utter self-reliance to the age of intense specialization, instantaneous world communication, interdependence, nuclear fission, and the threat of total personal reliance upon federal government for everything.

This constant erosion of personal liberties carries with it the imminent threat of loss of all of our fundamental freedoms.

In the past you and I have been able to

do our daily chore, go home and work a bit in the garden, look up at the blue of the sky, and thank God for the goodness of life. We could sit down with the wife and sip a bit of a drink before dinner, talk over the events of the day, make plans for our families, and plan for tomorrow with full confidence that, if we planned wisely and worked diligently, we could make those plans and hopes come true.

This was a simple satisfying life which brought injury to no one. It recognized the rights and prerogatives of all others to do likewise. It was good because we chose of our own free will and accord to do these things. In this simple statement, we have all of the elements of liberty and freedom as our way of life was conceived under God.

But now—creeping up on us out of our domestic economy, is this utterly loathsome, inexplicable horror of bureaucratic controls, run for the most part by men who were neither elected by, nor are they directly responsible to the people.

Men who, for the most part and for political reasons, deny "that government is best which governs least."

Men who, for all practical purposes, are beyond the control of Congress and whose rulings have the effect of law.

Men who insist that their fellow citizens, you and I, are too stupid and dumb to be entrusted with freedom of choice and personal responsibility.

No! You must become a ward of the federal government and accept whatever the welfare state may thrust upon you and/or take away from you.

Bureaus and agencies, once created, have never been known to dissolve voluntarily when, if ever, their job was completed.

If you don't like brussel sprouts, you EAT brussel sprouts and like them!

What this invasion of our personal freedoms and curtailment of the right to choose has done to the human mind in a generation appears to be of no moment whatever.

Our fundamental English language has not changed since the days of the Constitution, but the endless insidious wringing and twisting of fine points of interpretation by perverted minds in all categories of government has done utter violence to everything that was fundamental and sacred in basic American life.

The acceleration of this violence which is now going on in Washington is shortening the interval between the mere invasion of fundamental American rights and out-and-out Socialism.

As I said in the beginning, time is running out on me; but I hope that you, and you, and you will highly resolve to fight this destructive process with the same singleness of purpose with which our forefathers fought for liberty in the bleak days at Valley Forge.



MEDICAL CENTER NEWS

DR. SHAEFFER GIVES FIRST MEND LECTURE

Dr. Joseph R. Shaeffer, director of medical education and medical director of the Santa Rosa Medical Center in San Antonio, Texas, delivered the first annual student sponsored Medical Education for National Defense Lecture on April 16.

The title of his lecture was "Principles of Disaster Medical Care."

Dr. Shaeffer received his medical degree from Cornell University and completed his residency in general surgery at Bellevue Hospital in 1931. He is a past clinical professor of surgery at Baylor University Postgraduate School of Medicine.

Dr. M. Bruce Sullivan, Jr., is MEND coordinator for the University of Alabama Medical Center, and Ralph F. Coleman is coordinator of student affairs.

DR. CASTLE VISITS MEDICAL CENTER

Dr. William B. Castle, director of the Thor-dike Memorial Laboratory in Boston, was the guest of the University's department of medicine and the Medical Association of the State of Alabama the week of April 23.

Dr. Castle graduated from Harvard Medical School and interned at Massachusetts General Hospital. He is now chief of second and fourth medical services at Boston City Hospital and is George Richards Minot professor of medicine at Harvard Medical School.

He conducted a student-patient seminar at University Hospital the morning of April 24 and a research conference at the Veterans Administration that afternoon.

The next day he visited the department of medicine and in the evening delivered the Sigma Xi Lectureship "Present Status of Research of Intrinsic Factor."

On Thursday he delivered a paper on "Nutritional Macrocytic" before the 101st annual meeting of the Medical Association of the State of Alabama in the Municipal Auditorium and spoke before the Birmingham Society of Internists that evening.

DR. STRAUMFJORD JOINS MEDICAL FACULTY

Dr. Jon V. Straumfjord, former acting director of clinical laboratories at Jackson Memorial Hospital in Miami, has been appointed to the staff of University Hospital and Hillman Clinic.

He will serve as director of clinical laboratories at the hospital and will be an associate professor of pathology at the Medical College of Alabama.

Dr. Straumfjord is a native of Oregon and received his undergraduate and medical training in the mid-west. After obtaining his medical degree from the University of Oregon, he continued his education at State College of Iowa, where he completed his internship and residency and was awarded a Ph. D. in biochemistry.

ALVAREZ TO GIVE KRACKE LECTURE

Dr. Walter C. Alvarez, the well-known medical science writer and professor of medicine emeritus of the University of Minnesota, has been selected by the Phi Beta Pi medical fraternity to present the ninth annual Kracke Memorial Lecture on May 15.

He will speak at the 109th Evacuation Hospital and Mortimer Jordan Armory at 8:00 P. M.

Dr. Alvarez is a graduate of Cooper Medical College, now a part of Stanford University, and the San Francisco City and County Hospital.

He is an authority on nervous troubles and on diseases of the digestive tract. He is a member of 50 scientific societies and an honorary member of 21 societies, including the Royal Society of Medicine in England.

The Kracke Lecture series is named in honor of Dr. Roy Rachford Kracke, first dean of the four-year Medical College in Alabama in Birmingham from September of 1945 until June of 1950.

The series is sponsored by the Sigma Chapter of Phi Beta Pi annually to promote professional, cultural, and social functions for the benefit of its members, the medical center personnel, and members of the medical profession in the Birmingham area.

DR. WACHTEL JOINS STAFF

Dr. Jacob Wachtel, former director of the anesthesia department at W. W. Backus Memorial Hospital in Norwich, Connecticut, was recently appointed assistant professor of anesthesia at the Medical College of Alabama.

Dr. Wachtel was educated at the University of Vienna, receiving his medical degree in 1935. He taught and practiced there for

several years and was imprisoned by the Nazi regime.

He practiced medicine in Shanghai, China, and was civilian surgeon in charge of the 325th Sqdn. Dispensary of the 14th U. S. Air Force before coming to the United States.

He interned at the Metropolitan Hospital in New York and completed his anesthesia residency training at Brooklyn J. Hospital. He was certified by the American Board of Anesthesiology in 1958. He has had appointments at Sinai Hospital, at the Wayne State Medical College in Detroit, and at Montefiore Hospital in New York where he did most of his heart work.

He has contributed substantially to the development of "balanced anesthesia" and especially intravenous analgesia for heart and general surgery. He has presented papers on his specialty in various journals and at international conventions.

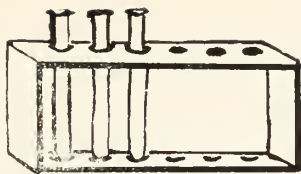
DENTISTRY DEAN NAMED

Dr. Charles A. McCallum, Jr., has been appointed dean of the University of Alabama School of Dentistry.

In making the announcement, President Frank A. Rose said Dr. McCallum will take the position to be vacated by Dr. Joseph F. Volker September 1 when he becomes vice president of the University of Alabama for Health Affairs.

A 1951 graduate of Tufts College Dental School, McCallum holds an M. D. degree from the Medical College of Alabama. He did graduate work at Dartmouth College and Wesleyan University.

He came to the University as an instructor in the department of oral surgery in 1956. In 1958 he was named associate professor and chairman of that department. He was promoted to full professorship in 1959.



STATE DEPARTMENT OF HEALTH

POLICY-RE LIVE VIRUS VACCINE FOR POLIOMYELITIS

Now that the United States Public Health Service has licensed Type III Sabin vaccine the physician has available to him two types of vaccine.

(1) Salk vaccine, which has proven very effective in controlling poliomyelitis—given parenterally.

(2) Sabin vaccine (live virus)—consisting of Type I, II, and III, given separately and orally.

For a booster dose to a child that has had Salk vaccine a fourth Salk vaccine dose is recommended. To provide a booster by Sabin vaccine (original Salk inoculation) will require three separate doses of Types I, II, and III at intervals of six weeks. Sabin vaccine must be kept frozen and after thawing for use can be kept approximately a week.

In 1961 all isolations in Alabama were Type III infections.

The Health Department is recommending:

- (a) For infants—either Salk or Sabin.
- (b) For epidemics—Type specific Sabin.
- (c) For community-wide programs—for all ages—Sabin. This is believed to be the most effective use of live vaccine. Currently the Health Department does not have funds available that will permit purchase of Sabin vaccine for state-wide community programs. Ideally vaccine programs should be conducted from the fall through the winter and spring months.

Barring epidemics mass immunization will not be recommended before next fall and the extent then will depend on available funds and adequate vaccine supply.

DEPARTMENT OF HEALTH

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1962

*E E

	Feb.	March	March
Tuberculosis	79	113	175
Syphilis	155	162	156
Gonorrhea	331	349	326
Chancroid	3	0	3
Typhoid fever	0	2	2
Undulant fever	0	1	0
Amebic dysentery	1	4	2
Scarlet fever and strep. throat	129	92	157
Diphtheria	1	2	5
Whooping cough	5	7	24
Meningitis	3	5	13
Tularemia	0	0	1
Tetanus	0	0	1
Poliomyelitis	0	0	0
Encephalitis	0	0	2
Smallpox	0	0	0
Measles	314	369	673
Chickenpox	89	112	394
Mumps	68	55	189
Infectious hepatitis	167	97	31
Typhus fever	1	0	0
Malaria	0	0	0
Cancer	665	647	404
Pellagra	1	5	0
Rheumatic fever	13	24	12
Rheumatic heart	29	56	25
Influenza	2,778	706	389
Pneumonia	233	276	278
Rabies—Human cases	0	0	0
Pos. animal heads	1	4	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.



BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director
SPECIMENS EXAMINED

March 1962

Examinations for malaria	8
Examinations for diphtheria bacilli and Vincent's	29
Agglutination tests	522
Typhoid cultures (blood, feces, and urine)	515
Brucella cultures	3
Examinations for intestinal parasites	2,866
Darkfield examinations	3
Serologic tests for syphilis (blood and spinal fluid)	24,756
Examinations for gonococci	1,813
Complement fixation tests	107
Examinations for tubercle bacilli	4,184
Examinations for Negri bodies (smears and animal inoculations)	208
Water examinations	2,402
Milk and dairy products examinations	4,568
Miscellaneous examinations	5,193
Total	47,177

This includes the Dothan Branch Laboratory omitted from the February report.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA, FEBRUARY 1962

Live Births Deaths Causes of Death	Number Registered During February 1962			Rates* (Annual Basis)		
	Total	White	Non-White	1962	1961	1960
Live Births	6,166	3,838	2,328	24.0	24.5	24.7
Deaths	2,458	1,553	905	9.6	9.1	11.4
Fetal Deaths	98	42	56	15.6	20.0	20.2
Infant Deaths—						
under one month	102	56	46	16.5	18.2	15.6
under one year	179	83	96	29.0	32.0	30.2
Maternal Deaths	6	2	4	9.6	7.9	6.1
Causes of Death						
Tuberculosis, 001-019	15	8	7	5.8	6.3	15.8
Syphilis, 020-029	3		3	1.2	2.0	2.7
Dysentery, 045-048	1	1		0.4		0.8
Diphtheria, 055						
Whooping cough, 056					0.4	
Meningococcal infections, 057						1.2
Poliomyelitis, 080, 081						
Measles, 085	2	2		0.8		0.4
Malignant neoplasms, 140-205	309	223	86	120.4	103.7	106.1
Diabetes mellitus, 260	44	28	16	17.2	15.4	21.2
Pellagra, 281					0.8	
Vascular lesions of central nervous system, 330-334	351	203	148	136.8	130.5	159.3
Rheumatic fever, 400-402					0.4	0.4
Diseases of the heart, 410-443	837	588	249	326.2	311.2	390.7
Hypertension with heart disease, 440-443	156	74	82	60.8	59.9	68.3
Diseases of the arteries, 450-456	59	40	19	23.0	23.7	27.0
Influenza, 480-483	34	18	16	13.2	5.1	51.7
Pneumonia, all forms, 490-493	74	34	40	28.8	39.8	58.6
Bronchitis, 500-502	4	3	1	1.6	4.3	2.7
Appendicitis, 550-553	3	2	1	1.2	0.4	1.2
Intestinal obstruction and hernia, 560, 561, 570	14	10	4	5.5	5.1	4.2
Gastro-enteritis and colitis, under 2, 571, 0, 764	14	3	11	5.5	4.3	5.4
Cirrhosis of liver, 581	19	15	4	7.4	4.3	7.7
Diseases of pregnancy and childbirth, 640-689	6	2	4	9.6	7.9	6.1
Congenital malformations, 750-759	28	22	6	4.5	4.7	3.9
Immaturity at birth, 774-776	33	13	20	5.4	5.5	4.4
Accidents, total, 800-962	136	83	53	53.0	63.1	57.9
Motor vehicle accidents, 810-835, 960	63	45	18	24.6	23.3	19.7
All other defined causes	361	213	148	140.7	134.1	144.3
Ill-defined and unknown causes, 780-793, 795	111	42	69	43.3	38.6	58.2

*Rates: Birth and death—per 1,000 population
Infant deaths—per 1,000 live births
Fetal deaths—per 1,000 deliveries
Maternal deaths—per 10,000 deliveries
Deaths from specified causes—per 100,000 population

a medical milestone at America's crossroads

AMA 111th Annual Meeting

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See JAMA May 19 for complete scientific program... for physician advance registration and hotel reservation forms

The Woman's Auxiliary

It is with both humility and pride that I have accepted the office of president of the Woman's Auxiliary to the Medical Association of the State of Alabama. The humility is because of my limited ability; the pride is because I think this is the most important organization to which a physician's wife may belong, and to serve as its president is a great honor. I pledge my best effort. Using the thought expressed by Margaret English when she accepted the office of national president, I would like to ask of you when I make mistakes—and I will—that you judge me with charity, for my mistakes will be of the head and not of the heart.

In charting our course for the future we always look first to the past. What a wonderful year we have had under the capable leadership of Vicki Cunningham. The reports given at the convention, due to the time limitation, include only a portion of the many activities of the members. As you listened you were inspired by their indication of what each doctor's wife has been doing in her own community to sustain the ideals of her husband's profession.

For me, the year just passed has been a time of learning. Louise Thuss (national president-elect) has shared with me her vast store of knowledge. Vicki has helped immeasurably as have all of you on whom I have called. The Fall Conference in Chicago for presidents and presidents-elect was educational and entertaining. I wish it were possible for all of you to attend. I was so proud of Louise and very gratified by the love and consideration shown her by Margaret English and all who were there.

This has also been a year of getting to know many of you I had not known personally before. It was my privilege to attend the four district meetings. I found them most inspiring. It has been an altogether wonderful year for which I am deeply grateful.

As we begin the new year in auxiliary work, we are faced with a continuing controversy. Federal planners continue to propose schemes out of tune with the ideals of freedom, as we conceive of freedom. Our ultimate goal must be the defeat of these schemes. Vicki has told me that I need not be afraid. Supporting me are over 1,200 interested women endowed with great abilities. They are ready to co-operate. On this knowledge I am leaning heavily.

The challenge is great and our success depends not alone on your elected officers but on the combined efforts of each individual member. We are not alone. There are others who also believe as we do. Yi Kintner (president of the Woman's Auxiliary to the Indiana Medical Association) told her members, "We have passed beyond the point where we are talking to ourselves and our friends exclusively; we are now addressing the neutrals and are tangling with the hostile. In sticking out our necks we are running the risk that someone will try to chop off our heads. This risk cannot be avoided if we are to reach, inform, and inspire to action our potential allies. Somewhere each of us must find the courage to do her part."

Our Heavenly Father in the Gospel of Saint John assures us, "And ye shall know the truth and the truth shall make you free."

The truth is available to us. A good source is the WHAM (Women Help American Medicine) program. Let us determine to know the truth and to share our knowledge with those with whom we come in contact. We are not fighting for the medical profession only but for the preservation of our way of life.

We did not light the torch of freedom. It was put into our hands by those who have gone before us. But may we, with God's help, keep it burning brightly to pass on to those who will follow.

Ida Kimmey

OBITUARIES

REID—James Reid, M. D., Clayton, died on December 31, 1961, of generalized arteriosclerosis at the age of 77.

Dr. Reid, a native of White Oak Springs, Alabama, attended Barbour County Public Schools and the Eufaula District Academy of Clayton before entering Alabama Polytechnic Institute. He received a degree in pharmacy in 1904 and entered the Medical College of the University of Alabama. After receiving his medical degree in 1912 he did postgraduate work at Saint Vincent's Hospital in Birmingham, Touro Infirmary in New Orleans, Johns Hopkins University and Brady Hospital in Baltimore.

Dr. Reid served as local surgeon for the Tennessee Coal, Iron, and Railway Company at Oxmoor, Alabama. In 1915, he entered general medical and surgical practice in Clayton, Alabama, where he practiced until he retired in 1960.

He was a member of the Barbour County Medical Society, Medical Association of the State of Alabama, Southern Medical Association, and American Medical Association. He was a past president and secretary-treasurer of his local county medical society.

Survivors are two sons, Hugh Robert and Dr. Charles Laurence Reid.

HOLLIS—Latta Winston Hollis, Mobile, died on March 30, 1962 at the age of 68.

Dr. Hollis received his medical degree from the Medical College of Alabama and served his internship at the City Hospital in Mobile.

He was a member and former president of the Mobile County Medical Society. He served as a member of the Society's Board of Censors and the Mobile County Board of Health. Dr. Hollis belonged to the Medical Association of the State of Alabama, American Medical Association, Southern Medical

Association, and Kappa Psi Medical Fraternity.

Dr. Hollis was a staff member of the Mobile Infirmary, Providence Hospital, and Mobile City Hospital.

He was chairman of the Mobile Housing Board and a member of the board of directors of the Mobile Gas Service Corporation.

Survivors include his wife, Mrs. Eunice S. Hollis; his daughter, Anne E. Hollis; two sons, Dr. Charles J. Hollis and William W. Hollis; his sister, Lucile Hollis Conner; and three grandchildren.

WRIGHT—Lee Roy Wright, a native of Cleburne County and a civic leader in Heflin, died on March 30, 1962, in Birmingham at the age of 88.

Dr. Wright received his medical training at the University of Nashville Medical School, now University of Tennessee, in 1900. He opened his practice in Heflin in the fall of 1900 and practiced there until he retired in 1961.

Dr. Wright was a charter member of the Cleburne County Medical Society and served as its president for many years. He was a longtime member of the Medical Association of the State of Alabama, American Medical Association, Southern Medical Association, and Southern Railway Surgeons. He was surgeon for the Southern Railway for 56 years.

In 1950 he was honored by the University of Tennessee and the Medical Association of the State of Alabama with 50 year certificates.

Surviving are his son, William W. Wright of Heflin; his daughter, Mrs. Kenneth A. Byrd of Birmingham; and five grandchildren.

JOHNSON—George L. Johnson, who served as chief medical officer of the Montgomery Veterans Administration Regional Office for five years prior to his retirement in 1952, died on March 3, 1962, at the age of 79.

Dr. Johnson received his medical degree from the University of Georgia in 1908.

During World War I he served with the Army Medical Corps overseas for two years and was awarded the Croix de Guerre with silver star.

In 1944 he was commissioned a lieutenant-colonel in the Medical Corps.

The native of Upson, Georgia, worked with the Veterans Administration at hospitals in Muscogee, Oklahoma, Atlanta and Thomasville, Georgia, and was manager of the VA Hospital in Tuscaloosa for 14 years.

Dr. Johnson was a member of the Montgomery County Medical Society, Medical Association of the State of Alabama, and American Medical Association. He was also a member of the American Legion, Disabled American Veterans, and the Veterans of Foreign Wars. He was a Royal Arch Mason and member of the First Methodist Church in Montgomery.

BROOKS—Clyde Brooks, Tuscaloosa, died on January 8, 1962, at the age of 80.

Dr. Brooks, a native of Paris, Missouri, took his pre-medical training at the University of Missouri and received his medical degree from Rush Medical College. He served an internship in pathology at the University of Chicago at Cook County Hospital.

In Tuscaloosa he specialized in psychiatry and was a staff member of Bryce Hospital.

Dr. Brooks was a member of the Tuscaloosa County Medical Society, The Medical Association of the State of Alabama, and American Medical Association.

UNDERWOOD—S. Sellers Underwood, M.D., Birmingham, died April 17, 1962, at the age of 67.

Dr. Underwood was born in Randolph County and attended the Alabama Presbyterian College before entering Tulane University School of Medicine.

He served in World War I as a captain.

Dr. Underwood practiced general medicine and gynecology in Birmingham where he was a member of the Birmingham Clinical Club, Birmingham Surgical Society, and Jefferson County Medical Society. He belonged to The Medical Association of the State of Alabama and the American Medical Association.

He is survived by his wife and a son, Samuel Sellers Underwood, Jr.

CARMICHAEL—Josiah Nail Carmichael, M. D., Fairfield, died April 30, 1962, at the age of 77.

The native of Goodwater, Alabama, had been engaged in general practice in Fairfield for 49 years. He was a graduate of the Medical College of Alabama.

Dr. Carmichael was a former president of the Alabama Academy of General Practice and the Alumni Association of the Medical College of Alabama.

He was a staff member of University Hospital.

Dr. Carmichael was a life member of the Jefferson County Medical Society, American Medical Association and the American Academy of General Practice.

He is survived by his wife; a daughter, Mrs. George Skipper of Jackson; two sons, Dr. Herbert Carmichael of Birmingham, and Daniel Carmichael of Detroit; six brothers, Dr. R. D. Carmichael of Griggsville, Ill.; Dr. W. M. Carmichael of Greensboro; Dr. P. H. Carmichael of Richmond, Va.; Dr. O. C. Carmichael of Asheville, N. C.; Dr. F. D. Carmichael of Denver, Colo., and Dr. John L. Carmichael of Birmingham; three sisters, Mrs. Earl Hodson and Mrs. H. W. Phillips, both of Birmingham, and Mrs. T. G. Watts of Bryan, Texas; eight grandchildren and a number of nieces and nephews.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 31

June 1961

No. 12

Tuberculosis And Coronary Thrombosis II—The Low Incidence Of Fatal Heart Attacks In Patients In A Large Tuberculosis Hospital

J. H. ROGERS, M. D.

Gadsden, Alabama

R. F. CORPE, M. D.

Rome, Georgia

In a previous paper by one of the authors evidence was presented that the incidence of fatal coronary thrombosis (myocardial infarction, coronary occlusion, "coronary," "heart attack") is considerably less than in the general population.¹ It was postulated that tuberculous infection provokes a response in the body that has protective action against coronary thrombosis and thromboembolism in general. A circulating anticoagulant was suggested.

The purpose of the present paper is to report the findings of a similar study conducted at a large tuberculosis sanatorium and to reiterate the speculations made in the original paper.

Dr. Rogers is engaged in the practice of internal medicine in Gadsden, Alabama, and Dr. Corpe is superintendent of Battey State Hospital in Rome, Georgia.

From Battey State Hospital, Rome, Georgia.

This investigation was supported by a grant from The Life Insurance Company of Alabama.

Material for this study was obtained from Battey State Hospital, Rome, Georgia. Battey State Hospital is a large institution of about 2000 bed capacity. Outside of a V. A. Hospital and two small county hospitals it is the only tuberculosis hospital in the state of Georgia.

Charts were reviewed of 214 cases, white males, age 40 and above who had died in the hospital during the years 1952 through 1956 inclusive. Of the 214 cases 85 while having tuberculosis died primarily of causes other than tuberculosis. Pertinent data concerning these 85 patients are herewith presented. Ages at death ranged from 40 through 82 years with an average age of 62.7 years. There were eight deaths due to coronary thrombosis giving an incidence of 9.4 per cent of the 85 cases. The average age of patients dying of coronary thrombosis was 58.1 years—the youngest being 41 years of age at death—the oldest 77. Twenty deaths were due to malignant disease (including Leukemia).

There were 11 deaths due to cerebral vascular accident. Pulmonary embolism accounted for one death. No case of cor pulmonale was included in the 85 selected cases as this was considered a tuberculosis death. However 26 deaths were attributed to cor pulmonale of the 214 original cases.

Discussion

There is a widespread impression among phthisiotherapists that the incidence of coronary thrombosis in tuberculous patients is less than in the general population.²⁻¹⁹

The primary reason for conducting this study was to learn more of the true incidence of coronary thrombosis in tuberculous patients. Although the cases available for study (85) number much less than those used in the original study (325) their selection is probably better and the diagnoses more nearly accurate since hospital records instead of death certificates are used as a basis for analysis.* Coronary thrombosis occurred eight times in the 85 cases for an incidence of 9.4 per cent. In any unselected group of white men dying at ages 40 and above about 30 per cent will die of coronary thrombosis.¹ Therefore where coronary thrombosis occurred eight times, other things being equal, it should have occurred 26 times (30 per cent of 85). In other words in this group coronary thrombosis occurred about $\frac{1}{3}$ (8/26) the predicted number of times which could ordinarily be expected. Although these numbers are small (8 vs 26) they are mathematically significant. Malignant disease accounted for 20 deaths and cerebral vascular accident 11. Coronary thrombosis (occurring only eight times in this study) ordinarily accounts for

considerably more deaths in white males age 40 and above than either malignant disease or cerebral vascular accident. These observations further strengthen the reliability of the conclusion drawn from the small available figures.

As pointed out previously it would not appear logical to apply the dietary theory of coronary disease to these tubercular patients since high caloric (fat) diets are used in the treatment of tuberculosis. In this connection, of interest, is a report from India wherein it is stated that blood lipids in tuberculous (and leprosy) patients are elevated in comparison with normal subjects.²⁰ Although data for an exact statistical study of blood lipids at Battey State Hospital are not now available it has been the impression that serum cholesterol levels tend to "run high." In 1957 a third of the determinations were over 250 mg per cent and 16 per cent were over 300 mg per cent. In the cachectic tuberculous patient the serum cholesterol level may, of course, be expected to be low.

A sedentary life is said by some to favor the occurrence of heart attacks. Rest still remains an important part of the treatment of tuberculosis.

Venous thrombosis and pulmonary embolism are said to be relatively rare in tuberculous patients and this has been the experience at Battey Hospital.²¹⁻²⁶ This would appear to be unusually significant since cor pulmonale, which should favor the development of venous thrombosis, is a rather common complication in the older tuberculous patient.

To the authors a *prima facie* case for the existence of a blood clotting abnormality (a fortunate one insofar as thromboembolism is concerned) is presented by this group (tuberculous patients) who suffer less from blood clotting in the coronary arteries and in the peripheral veins than the population in general. This would be no surprise to thoracic surgeons who find excessive bleeding during and after surgery on tuberculous patients a common problem. Or to clinicians who cope

* The incidence of deaths from various causes in general hospitals does not necessarily reflect the incidence in the general population. The authors believe however that the incidence of deaths from various causes in tuberculosis hospitals does fairly accurately measure the incidence in the tuberculous population inasmuch as a goodly portion of this population is confined to these hospitals, the hospital stays in general are long, and admissions generally are restricted to those with active tuberculosis.

with the age old problem of pulmonary hemorrhage in tuberculosis.

Confirmation for this theory is dependent on a demonstration of impaired coagulation occurring regularly in tuberculous patients. Of great interest in this connection, is the work of Stähelin who in 1919, employing Fonio's method of determining the coagulation valence of blood, observed that the ability to coagulate was diminished in tuberculous patients.²⁷ This method determines not the coagulation time but the ability of the blood to overcome a factor (magnesium sulfate in various concentrations) which inhibits coagulation.

Tuberculous infection as seen in a tuberculosis hospital, apparently reduces the chance of a fatal heart attack to one third of what could normally be expected. The problem is how to obtain this protection safely. Even now a safe tuberculous infection may be given in the form of BCG vaccination—even the pulmonary route appears available.

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Ocular Injuries And The General Practitioner

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Preliminary or first aid care of ocular injuries frequently determines whether or not useful vision, or even the eye itself, can be preserved. The ophthalmologist usually sees patients with ocular injuries only after they have been referred for definitive care. The general practitioner should direct his efforts toward preventing further injury to the eye than already has been caused by the original trauma and to protect the patient whose life might even be endangered by associated injury. Penetrating wounds of the eye are frequently accompanied by intracranial injury, a fact that should always be kept in mind. Although ocular injuries caused by mechanical forces are more common, the general practitioner should know the proper first aid management of chemical burns.

Chemical Burns

Chemicals damage the eye by injuring the eyelids, conjunctiva, and cornea. The extent of the damage depends upon the nature of the chemical and the length of time the substance is allowed to remain in contact with the ocular tissues. Immediate and copious lavage with any non-irritating fluid is of paramount importance. Isotonic saline is usually used in

hospital emergency wards but when not available plain tap water or any non-irritating material should be used immediately following the injury. A rubber bulb irrigating syringe is ideal for irrigating conjunctival cul-de-sacs but water from a spigot will suffice. Lavage should be continuous for 20 to 30 minutes immediately after the injury and continued every half hour for several hours. Local and systemic antibiotics should be instituted immediately to avoid secondary infection. Steroids locally may help prevent inflammation and help avoid secondary scarring and cicatrization. Additional therapy such as atropine may be indicated. The prognosis should always be guarded. Acid burns are much less dangerous to the eye than alkali burns which cause the most serious of all chemical burns. Alkali seems to combine with the tissues, apparently in a still active form, causing progressive damage over a period of months or years.

The serious sequelae of chemical burns are corneal ulceration accompanied by corneal opacities, necrosis or even perforation. The conjunctiva may scar with the formation of adhesions, called symblepharon, between the globe and the lid. These may be corrected later by mucous membrane grafts. Conjunctival flaps may be temporarily reflected over damaged cornea to prevent or seal a corneal perforation. Occasionally a corneal graft may be used in an attempt to save an eye, but these tend to become vascularized and opaque.

Read before the Birmingham Academy of Medicine, Birmingham, Alabama, September 19, 1961.

From the department of ophthalmology, Hospital of the University of Pennsylvania, Graduate School, University of Pennsylvania, Philadelphia General Hospital, and Children's Hospital of Philadelphia.

Mechanical Injuries

Any patient suffering a mechanical injury in the area of the eye should be suspected of having associated injury to the eye, orbit, paranasal sinuses, and cranial contents. Visual function should always be determined, if not by a Snellen chart, by having the patient compare the vision of each eye looking across the room and near at hand. The eyeball should be inspected for external evidence of hemorrhage or perforating injury. All too often the ophthalmologist sees a patient two or three days after repair of a lid laceration in a receiving ward who, in addition, has a laceration of the globe which if repaired early would have been innocuous. The patient should be questioned about diplopia to help exclude injury to cranial nerves supplying the ocular muscles or injury to the orbit itself. The orbital rim should be palpated. When the injury has been due to a high velocity missile, or possible associated intracranial or paranasal sinus injury is suspected, adequate roentgenograms should be taken.

Orbital Injuries

Injuries of the orbital rim most commonly involve the area of the zygoma and maxilla. Inspection and palpation, especially of the orbital rim, often demonstrate their presence. When any doubt exists, roentgenograms of the skull and orbit should be taken. Attention may be called to a fracture or perforating injury into a sinus by emphysema of orbital tissues particularly after forcibly blowing the nose or sneezing. These patients should be carefully watched for a subsequent infection or hemorrhage into the sinuses. The injury to the orbit which is most commonly overlooked, following blunt trauma, is the so-called blow-out fracture of the floor of the orbit. (Fig. 1) This bone is paper thin and may be depressed with herniation of orbital contents into the maxillary sinus. The end result is enophthalmos and diplopia. The eye may be proptosed immediately following the injury because of orbital hemorrhage or edema and the diagnosis thus missed. The most suggestive diagnostic sign is diplopia on



Fig. 1. Photographs showing injury resulting from fracture of orbital wall into paranasal sinus.

A. Enophthalmos and dropping downward of eye due to herniation of orbital contents.



B. Limitation of upward gaze with diplopia.



C. Marked enophthalmos.

upward and downward gaze. Ocular rotations are impaired because the orbital contents including the inferior rectus muscle are incarcerated at the fracture site. Roentgenograms of the orbit must be taken with specific instruction to do body section films because ordinary techniques do not suffice to demonstrate the blow-out. If the disease is recognized early, the prognosis is excellent. The floor of the orbit can be restored and the orbital contents replaced through the Caldwell-Luc approach or by direct exposure gained from incision through the lower lid. Cartilage or other implants may be necessary for reinforcement of the floor. Late recognition and late repair give unsatisfactory results.

Lacerations Of The Eyelids

Lacerations of the eyelids unaccompanied by injuries to adjacent structures should be sutured as soon as possible. Immediate care should consist of mechanical removal of obvious foreign bodies and debris. Irrigation with sterile saline solution might be desirable. If the cornea is exposed due to extensive laceration or loss of substance of the eyelid, the eye should be protected by ointments and an air tight shield. At times remnants of skin can be used and held by a simple suture, to cover and protect the eye.

Small superficial lacerations parallel to the lid margin can be very easily managed by appositional sutures. If the laceration is small, no suture may be required. Debridement is almost never necessary in the area of the eyelid because of the excellent blood supply and infection is therefore very infrequent.

Lacerations through the lid margin present a special problem. If repair is not done during the first few days after such an injury, the wound edges gape resulting in a large notch in the lid margin or if the laceration is sufficiently large, the entire structure of the eyelid may disappear. This occurs because the orbicularis oculi muscle fibers, which run at right angles to the wound, first contract and then undergo contracture with fibrosis. The tarsal plate likewise becomes shrunken

and fibrotic until what was initially the intact half of the lid is represented by a fibrous nubbin. The edges can no longer be apposed and extensive reconstructive surgery to rebuild the eyelid is needed. When sutured early, they can be repaired easily by direct approximation of the cut edges. The inner half of the lid containing the tarsal plate is closed by interrupted 6/0 mild chromic catgut sutures. These are placed in such a manner that, when tied, the knots are within the substance of the lid. The skin and orbicularis, next, are brought together by using 6/0 black silk. More complicated types of repair have been described but are usually unnecessary. Lacerations through the extreme nasal portion of the lid which contains a portion of the lacrimal apparatus called the canaliculus offer special problems not pertinent to the present discussion. Repair, which is necessary to prevent tearing, is tedious and of interest primarily to the ophthalmologist.

Lacerations of the Eyeball

Immediate Care

The management of lacerations involving the eyeball itself presents many difficult problems. Immediate treatment, which is of the utmost importance, is mainly prophylactic and must be directed toward preventing further injury than that which has already been caused by the initial trauma and to prevent, as far as possible, future complications. The injured eye should be immobilized immediately to prevent herniation of ocular contents. This can be accomplished best by patching both eyes and moving the patient by litter. No attempt should be made to remove what appears to be a foreign body or a clot of blood because of the danger of injury to intraocular structures. The iris may be bound to the clot and indistinguishable from it. Furthermore, manipulation of a recently injured eye causes pain with the result that the patient forcibly squeezes his lids together and may cause herniation of ocular contents. Such manipulation and even detailed examination of the eye should be done only with adequate facial akinesia combined with local

or general anesthesia. Broad range antibiotics should be instituted as soon as possible after all lacerations of the globe since they must be considered contaminated. Infection, once started, usually causes permanent damage. Atropine should be instilled to help delay traumatic iridocyclitis. Tetanus protection must be considered just as necessary as in any injury to other regions. The possibility of intraocular foreign body must always be considered, a precaution too frequently overlooked even by the ophthalmologist.

Definitive Care

The possibility of intraocular foreign body must be considered in all cases of eye trauma, especially in lacerations of the globe. If the slightest doubt exists, all efforts should be made to demonstrate its presence. The simplest is a survey Roentgen study of the orbit. When such studies are negative, the anterior segment of the eye can be examined by using dental film held firmly between the eyeball and the nose.

Very small corneal and scleral lacerations with no herniation of iris or uveal tissue and no evidence of intraocular injury, at times, may be left unsutured. Bilateral patching of the eyes with a gentle pressure dressing immobilizing the lids of the injured eye will suffice. The anterior chamber will usually reform with such bilateral patching. Antibiotics and atropine are continued. Miotics may be indicated to prevent iris prolapse if the corneal laceration is peripheral.

In more extensive corneal and scleral lacerations, appositional sutures are necessary to close the wound edges. The second method of closing a corneal wound is a conjunctival flap but this is meeting with increasing disfavor. Closure of the wound is not as firm as with direct sutures and leads to more irregular scarring and vascularization.

Lacerations of the sclera and cornea accompanied by prolapse of intraocular contents are much more difficult to manage. Iris

prolapse may require excision of the protruding iris because of fear of contamination. However, with the availability of broad range antibiotics, an increasing number of surgeons replace the iris and retain a more cosmetically acceptable and functional round pupil. If the prolapse is associated with rapidly developing cataract, often repair of the iris prolapse may be delayed for a day or so until the lens is opaque at which time it can be removed by gentle irrigation at the time of repair of the laceration. If this is not done and the lens material is allowed to remain in the anterior chamber, the lens material frequently causes an irritative iridocyclitis and may even cause loss of the eye.

The threat of sympathetic ophthalmia is always present following any wound involving the uveal tract. It probably occurs on the basis of an allergic response to uveal pigment on the part of the fellow eye due to the disorganization of pigment containing cells of the injured eye. The only satisfactory treatment is prevention, which is accomplished by prompt enucleation whenever indicated. The poorest prognosis is afforded in eyes with poorly healed wounds in which there is incarceration of uveal tissue and especially if an intraocular foreign body is present. A delay of two weeks is permitted because sympathetic ophthalmia does not occur for this period of time after the injury.

The prognosis for an eye with a laceration over the ciliary body must always be guarded, although the outcome can be surprising. We must remember that a wound through the ciliary body at right angle to the limbus results in less bleeding because the blood supply runs from front to back through the ciliary processes and the vessels, therefore, are parallel to each other. A jagged wound or one parallel to the limbus is therefore apt to cause much more bleeding by tearing more vessels. If visual function is fair as judged by good light perception and projection, wound repair should be attempted even if uveal tissue has prolapsed, and the eye observed for the safe period of two weeks.

The prolapse of tissue should be excised and cauterized before placing sutures.

If the wound is large and jagged, the ciliary body is prolapsed, vitreous hemorrhage marked, and light perception is absent, prompt enucleation is advisable. However, this is not an emergency procedure. Little danger of shock, hemorrhage, or serious infection is encountered, particularly if antibiotics are used. Possible associated intracranial injury should be excluded by Roentgen studies and careful observation of the patient, especially when high velocity fragments are involved. General anesthesia or even sedation for local anesthesia might mask signs of intracranial bleeding or other involvement. (Fig. 2)

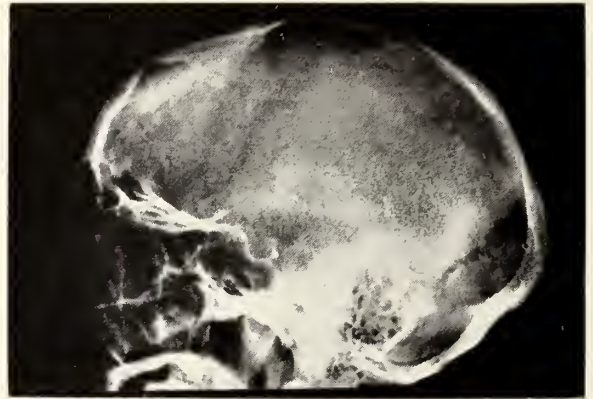
If allowed to remain in the eye, metallic foreign bodies become deposited in the ocular tissues and may cause degeneration of the globe. This is especially true of copper and iron. Iron causes siderosis of the eye as it is gradually taken up by the cornea, lens, iris, ciliary body, vitreous, and retina. The ocular structures develop a yellowish stain and with time cataracts, retinal degeneration and detachment, and glaucoma may develop. Copper is even more irritating. Every effort, therefore, should be made to remove metallic foreign bodies.

Contusion of the Eyeball

Severe blunt force can affect the globe primarily by sudden dispersion of energy throughout a closed system. A major center of force is felt to lie in the aqueous which drives the iris diaphragm posteriorly with a force which may tear the iris root or ciliary body. Contusion may result from direct involvement of the eye by the traumatic agent or the eye may be involved as a result of a high velocity fragment striking neighboring tissues with transmission of the impact to the eye. Aside from obvious tears and ruptures at weak points, the primary disturbance following contusion is that of the neurovascular system. Probably marked pressure ischemia occurs initially, followed by a post-traumatic dilatation and hyperemia. Multiple effects

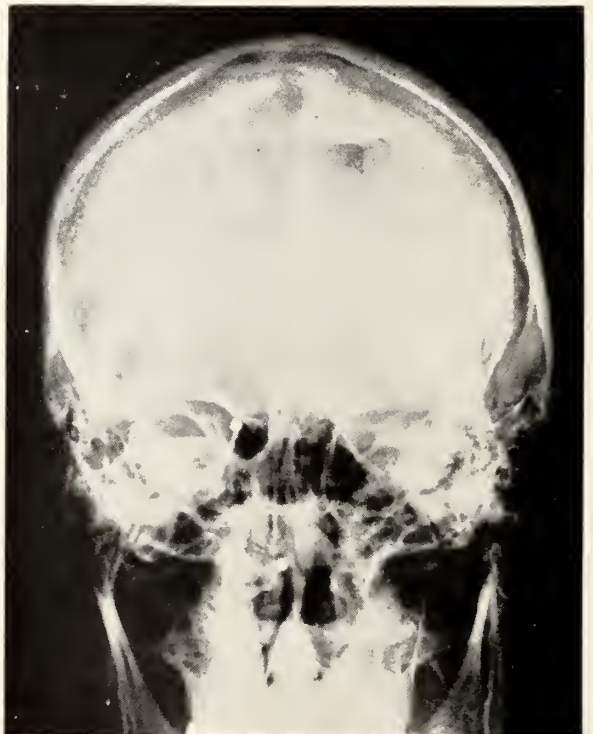


Fig. 2. A. Small perforating injury of right eye with iris prolapse.



B and C Roentgen examination of skull showing shot gun pellets adjacent to pituitary and internal carotid and in nasopharynx.

Patient subsequently went into shock from hemorrhage.



are possible on all ocular tissues, many of which are poorly understood.

Subconjunctival hemorrhage and chemosis are common and usually inconsequential. Treatment is not necessary with gradual reabsorption of the blood in three to four weeks.

Hemorrhage into the anterior chamber or hyphemia is a common and extremely serious result of ocular contusion. The cause may be reflex hyperemia of the iris and ciliary body or actual iridodialysis. Regardless of the cause, the patient should be admitted to the hospital, sedated rather heavily, the eyes double patched, and strict bed rest ordered! In most cases of partial hyphemia the blood will be absorbed and there will be no impairment of vision. However, secondary glaucoma and blood staining of the cornea can result in loss of vision or even of the eye. This follows massive initial hemorrhage or often secondary bleeding which is not uncommon three to five days following injury. Treatment in the past has been most unsatisfactory with very poor vision resulting in the majority of cases. Attempt at irrigation and mechanical removal of the clotted blood have been fruitless because of the firm adherence of the clot to the delicate iris. Many times this has resulted in evulsion of the iris and further bleeding. Recently we¹ have developed a technique whereby continued irrigation of the anterior chamber with fibrinolysin has been successful in partial clot liquification and freeing of the clot from the iris so that the clot might be aspirated from the chamber. Results have been most gratifying to date with this technique which, we believe, should be employed whenever the intraocular pressure becomes elevated in the presence of an anterior chamber full of blood.

Traumatic iridocyclitis may occur and at times become quite indolent. Theories as to the cause of this protracted irritation after injury are permanent vascular damage occurring with resultant transudation, minute lens capsule tears allowing small amounts of irritative lens material to escape, and traumatic dispersion of uveal pigment which acts as an irritant. The nongranulomatous irido-

cyclitis usually resolves rapidly on conventional therapy but occasionally an indolent endophthalmitis occurs with eventual loss of the globe.

Damage to the lens from simple contusion is rare, but does occur. Actual gross capsular rupture may be seen but is not necessary for the development of a cataract secondary to contusion. Zonular rupture with subluxation or dislocation may be seen, especially in the older age groups with cataractous lenses. Removal may be indicated if dislocation seems probable or if secondary glaucoma has developed.

Contusions of the globe may cause ruptures of the choroid, usually with massive intraocular hemorrhage. These ruptures usually occur at the posterior pole of the eye in half-moon shape parallel to the optic disc. Choroidal detachment might occur as a result of choroidal hemorrhage or may be secondary to serous exudation following trauma. The ophthalmoscopic picture shows a dark globular inbowing of the retina. The treatment in such cases is expectant and the prognosis is good if there is merely transudation. Extensive retinal atrophy may follow contusion of the eyeball and was a common cause of loss of vision in the last war.

Summary

The importance of proper emergency treatment in eye injuries has been stressed. The following injuries to the eye and orbit have been discussed: chemical burns, foreign bodies, laceration of the lids and lacrimal apparatus, lacerations of the globe, contusion of the globe, and orbital fractures.

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Safeguards In Gallbladder Surgery

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Detroit, Michigan

The preliminary step in safeguarding the patient begins with the history and physical examination, since many diagnostic errors result from an incomplete or inaccurate history. The careful recording of previous similar episodes, of jaundice, of pain in the back or shoulder, and of chills and fever will go far to eliminate much misinterpretation of symptoms. A complete physical check (Table I) should include not only evaluation of the biliary system but also of the entire gastrointestinal tract, if one is to avoid the embarrassment of encountering an unsuspected gastric or colonic lesion during the course of an operation projected for removal of the gallbladder. Furthermore, the recognition and correction of pathological processes, apart from the biliary tract, will do much to reduce the incidence of the so-called post-cholecystectomy syndrome. In all patients over the age of 40 the cardiac examination should include an EKG. A hemoglobin level of at least 11 grams is required.

Dr. Fallis is a graduate of Queen's University Faculty of Medicine in Kingston, Ontario, Canada, and is a full time staff member of the Henry Ford Hospital in Detroit. He is a member of American Surgical Association, International Society of Surgery, and American College of Surgeons.

Presented at the 100th annual session of The Medical Association of the State of Alabama, Tuscaloosa, Alabama.

TABLE I

Patient Evaluation

1. Accurate history
 2. Cholecystogram
 3. Liver function test
 4. Upper G. I. series
 5. Barium enema
 6. EKG 40 plus
-

Special Investigations

1. Liver function tests: In addition to the foregoing it is good practice to estimate the liver function by P. S. P. or flocculation tests. When these tests are run routinely minor degrees of liver dysfunction are not infrequently encountered. Response to corrective measures such as intravenous glucose and multiple vitamins is usually so prompt that operation need not be postponed for more than two or three days. The total hospital stay often is decreased due to a more rapid postoperative recovery. When permanent or irreversible dysfunction is present prudence dictates that the extent of the surgical intervention should be limited.

2. Pancreatic function test: In the presence of acute cholecystitis an amylase test should always be made in order to rule out associated acute pancreatitis. When a posi-

tive test is obtained conservative treatment is clearly indicated.

3. When jaundice is present: The appearance of jaundice is not an indication for emergency surgery. Time can always be taken for a thorough evaluation. When surgical intervention is mandatory it should be done at a time when the intensity of the jaundice is decreasing or a plateau has been established, since operation is always hazardous when the serum bilirubin concentration is rising. Moreover, under these circumstances serious consideration should be given to restricting the operation to the minimal surgical procedure that will decompress the biliary tract, such as cholecystogastrostomy or cholecystoenterostomy. Preoperative administration of vitamin K reduces the tendency to bleeding.

4. Urinary tract: Occasionally it is necessary to investigate the urinary system in order to determine the location of a solitary opaque nodule.

Preoperative Evaluation

A critical review of published mortality tables indicates clearly that the risk of cholecystectomy increases with each decade after the age of 50. The hazard in this age group is even greater when the inflamed gallbladder is removed.¹ This observation leads to the conclusion that there is still a place for cholecystostomy in the treatment of acute cholecystitis in the aged and even in certain cases of chronic cholecystitis with cholelithiasis in the poor risk patient with pronounced cardiac disease.

Anaesthesia

The complete relaxation of the abdominal musculature, so necessary to a safe operation, is produced by spinal anaesthesia in the hands of a competent anaesthetist but a satisfactory reduction in muscle tone can be obtained by general anaesthetic agents reinforced by muscle relaxants such as curare, etc. Local infiltration anaesthesia is ideal for the performance of cholecystostomy in poor risk patients.

Incision

Adequate exposure² of the operative field demands the use of a long incision. The vertical incision is adequate for the thin patient with a narrow intercostal angle but when the patient is obese and the costal angle is wide, the subcostal incision of Kocher is more satisfactory. This incision should extend medially to the opposite costal margin so as to divide the linea alba. At the lateral margin of the right rectus muscle care should be taken not to injure the 8th and 9th intercostal nerves. As the peritoneum is opened the ligamentum teres should be cut across since retraction of the left margin of the wound puts tension on this structure and restricts rotation of the liver. Drains should emerge through the belly of the rectus muscle and not at its outer margin which is the weakest point after wound closure.

Lighting

Maximum visibility is obtained only when the operating room light is directed obliquely into the depths of the wound from the patient's left side.

Assistants

At least two assistants are required, one of whom should be competent to take over and complete the operation. Most assistants require briefing on the importance of gentle handling of the tissues and the avoidance of forceful retraction.

Operative Steps

1. Exposure of the operative site. After complete exploration of the abdomen attention is directed to the operative site, the exposure of which is the keynote of a safe operation on the biliary tract. The hepatic flexure of the colon is protected by a large gauze pad and depressed downward with a Deaver retractor and in a similar fashion the stomach and duodenum are drawn over to the left. The surgeon now inserts his left hand over the dome of the liver and gently rotates the

liver to bring the porta hepatis well into view. This maneuver is facilitated by section of the ligamentum teres which when intact acts as a barrier to rotation.

2. Appraisal of the situation. The cursory examination of the biliary tract undertaken during the general abdominal exploration is now amplified by a detailed evaluation of the extrahepatic biliary tract and a decision is reached regarding the necessity for exploration of the common duct. The index finger of the left hand is passed through the foramen of Winslow as a preliminary step in the event that hemorrhage, resulting from subsequent maneuver, would require control by grasping the hepatic artery between the thumb and the first finger. If there has been a history of jaundice or pancreatitis, or if the head of the pancreas is indurated or the common duct is dilated, accurate appraisal of this structure is indicated. Incision of the peritoneum and the endo-abdominal fascia at the lateral border of the duodenum permits complete mobilization of the duodenum and the head of the pancreas. This operative step simplifies not only common duct exploration but also duodenotomy, should the latter be necessary for visualization of the sphincter of Oddi.

Attention is now turned to the gallbladder itself to verify the diagnosis and determine the indications for cholecystectomy. Thickening of the gallbladder wall and the presence of gallstones are of course clear indications for removal of the gallbladder. The failure to palpate small calculi in an otherwise apparently healthy gallbladder is a dilemma that the surgeon occasionally faces. Here reliance must be placed on a history of repeated attacks of gallbladder colic plus symptoms of gallbladder malfunction in the interval between attacks.

Removal of the Gallbladder

One should approach this operation with the philosophy that anatomic variations will be encountered, not that they might be present, inasmuch as in actual practice variations

from the text-book description of the vascular and ductal pattern are found in over 25 per cent of patients. Since it is impossible to keep in mind all the possible anatomic variations cognizance of great diversity in the vascular and ductal patterns alerts the surgeon to proceed with the extreme caution that the situation merits. Cholecystectomy must be regarded as a dangerous operation (Table II) since the margins of safety are so small and technical errors jeopardize not only the life but also the future welfare of the patient and his family. The gallbladder may be removed either from above downward or from below upward. Both methods are satisfactory and both have their advantages and disadvantages. The choice is usually based on the surgeon's training and experience. The author prefers the retrograde method except for the difficult cases where the direct approach, i.e., from above downward, has undeniable advantages.

TABLE II
Causes of Difficulties

1. Inadequate anaesthesia
 2. Small incision
 3. Poor assistants
 4. Insufficient lighting
 5. Deficient anatomic knowledge
 6. Haste
 7. Excitement
-

Extension of the greater and lesser omentum to the right with attachment of the former to the tip of the gallbladder and the latter enveloping Hartmann's pouch, erroneously referred to as adhesions, is not infrequently present. They should be detached from the gallbladder before attempting to delineate the cystic artery and duct in the important triangle of Calot. Aspiration of the contents of a distended gallbladder simplifies the operation.

With the liver maintained in rotation by means of a broad liver retractor and the stomach, duodenum and hepatic flexure kept out of the field by suitable retraction, the

cystic duct and cystic artery can be identified. Moderate tension through a clamp applied to the tip of Hartmann's pouch is of distinct value, especially in obese patients and those with pronounced inflammatory reaction in this area such as occurs in acute and subacute cholecystitis. In these circumstances visualization and differentiation of the artery and duct can be accomplished only by palpation after painstaking dissection of the surrounding and enveloping peritoneal and fatty tissues.

Cystic Artery (Table III)

The practice of en masse ligation of the cystic duct and artery cannot be too roundly condemned. The cystic artery which is shorter than the cystic duct should be ligated first since subsequent tension on the gallbladder could separate the cystic artery from its point of origin from the right hepatic artery and produce troublesome haemorrhage difficult to control.

TABLE III

Cystic Artery

Common abnormalities

1. Short trunk
 2. Early division
 3. Duplication
 4. Course paralleling Rt. Hepatic Artery
 5. Abnormal origin
-

Normally the cystic artery divides into superficial and deep branches as it approaches the gallbladder wall, but occasionally this separation takes place at some distance from the gallbladder, with the result that only the anterior or superficial branch is ligated and brisk bleeding occurs when the gallbladder is removed from the liver bed. The surgeon therefore should never assume that the gallbladder is supplied only by one vessel because, in addition to the foregoing, there may be a duplication of the cystic artery, each artery arising from a different source and pursuing its own course. The greatest hazard

in dealing with the cystic artery occurs when the right hepatic artery lies close to the gallbladder, either because the cystic artery trunk is short, or the right hepatic artery is retracted upward due to excessive tension on the gallbladder. Injury or ligation of the right hepatic artery can be avoided only by being absolutely certain that the vessel clamped or ligated is one that actually enters the gallbladder wall. It is always safer to isolate and tie the cystic artery rather than to clamp it.

Careful dissection, isolation and ligation of the blood supply of the gallbladder is the keynote of a safe cholecystectomy. Many injuries to the common duct are directly due to violation of this precept. Unexpected haemorrhage may be easily controlled by the thumb and forefinger, grasping the hepatic artery in the foramen of Winslow, thereby permitting a successful search for the bleeding point in a dry field. The excitement of this crisis inspires haste which too often is manifested by the successive placing of large artery clamps which usually controls the bleeding but unfortunately subjects the hepatic artery and common bile duct to crushing injury and even complete occlusion by the ligatures subsequently applied. When any of the blood vessels supplying the liver has been accidentally injured, full doses of antibiotics should be given in the postoperative period.

Cystic Duct

The cystic duct enters the common duct in front, at the side, behind, or runs distally parallel to it. The important feature is to dissect the duct for its full course. The structure presumed to be the cystic duct should not be clamped until positive verification is made of its connection with both the gallbladder and the common duct. In the event that exploration of the common duct is indicated it is often convenient to delay cutting the cystic duct until this investigation is completed, since the gallbladder and its duct may be used as a handle to maintain the common

duct in position. It should be ligated at a point $\frac{1}{2}$ cm. proximal to its termination. In contrast to accidents to the blood supply, which usually occur in cases of difficult dissection, the common duct is more often endangered in the so-called easy cases. (Table IV) A freely mobile pliable gallbladder is conducive to a relaxation of vigilance on the part of the operator resulting in tenting of the common duct on the gallbladder. A persisting false sense of security accounts for clamping and sectioning of the common duct. Ductal injuries should be repaired immediately.

TABLE IV

False Friends

1. Thin patient
2. The easy operation
3. Overconfidence

Exploration of the Common Duct

In addition to those cases with palpable calculi in the common duct, it should be explored when there is a history of jaundice and when the duct is dilated and thickened. Mobilization of the duodenum and head of the pancreas by incising the endo-abdominal fascia, as well as the peritoneum, simplifies the subsequent steps of the operation. The duct should not be opened until its identification is corroborated by aspiration of bile. False passages from the common duct are produced by forceful instrumentation in an endeavor to probe the bile papilla. It may be necessary to open the duodenum to dislodge an impacted calculus in the terminal common duct or to incise a constricted papilla. The duodenum must be closed accurately in a manner designed to obviate constriction of its lumen. Coaptation of the edges of the bile duct after placing the T tube should be done with absorbable sutures since silk or cotton has the tendency to be evacuated into the lumen where it can act as the nucleus of a calculus.

Removal of the Gallbladder

Retrograde operation: After section of the cystic duct, the gallbladder is dissected from its bed in the liver by blunt finger dissection after cutting peritoneal flaps along each margin. The possibility of additional arterial branches lying in its mesentery must always be entertained. The danger may be obviated by transfixing the mesentery close to the gallbladder with a catgut suture, which is used to close over the liver bed by uniting the edges of the previously prepared peritoneal flaps. Bleeding points should be controlled by transfixion sutures on a fine needle. The gallbladder bed should be examined minutely for evidence of small accessory ducts which sometimes drain into the gallbladder. These rarely encountered ducts require transfixion with fine silk or cotton sutures.

Direct operation: This type of removal is usually limited to the difficult cases such as occur in acute cholecystitis in the presence of small contracted gallbladders. It is ideal but usually impossible to secure the blood vessels as a preliminary step. It is therefore important to take all the precautions already alluded to and especially to resist the temptation to apply traction to the mobilized gallbladder, lest the trunk of the cystic artery should be fractured at its point of origin from the right hepatic artery. Once the blood supply is ligated dissection of the cystic duct is readily accomplished.

Drainage: A single Penrose drain with its tip in the foramen of Winslow is adequate in the majority of cases but an additional drain in Morison's pouch will be necessary when the common duct has been opened or there has been spillage of the gallbladder contents. The drains should emerge through a stab wound in vertical incisions and through the belly of the rectus muscle in subcostal or transverse incisions.

Closure of the wound: Gallbladder operations are followed by a high incidence of incisional hernias. Therefore, a careful layer closure with wire sutures in the anterior rectus sheath is clearly indicated.

Postoperative Care

Continuous gastric suction reduces nausea and prevents vomiting, which so often is the determining factor in wound dehiscence and ventral hernia. Moreover, the early appearance of bile in the gastric contents is evidence of the integrity of the common bile duct. Early ambulation is a most effective measure in the prevention of pulmonary atelectasis since assumption of the upright position promotes coughing and the clearing of mucus from the bronchial tree. The Penrose drains may be loosened and gradually removed after 72 hours unless drainage of bile is excessive. T tube drainage should be continued for at least 6 weeks and the tube should not be removed until a cholangiogram shows an unobstructed common bile duct. Fluid administration of 3000 cc by mouth or intravenously is usually sufficient to maintain a urinary output of 1000 cc daily unless there is a biliary fistula. It is important not to overload the circulation in patients with pulmonary and cardiac complications. Phlebotrombosis and its sequela, pulmonary embolism, are best treated by the early recognition of the complication and the prompt administration of anticoagulants. Unexplained fever plus an unexpected change in attitude in a patient who appears to be doing well should incite suspicion of phlebotrombosis. The presence of a positive Homans' sign or of irregularity in the circumference of the legs, recognized only by measurement, corroborates the diagnosis. The high inci-

dence of incisional hernia after gallbladder surgery indicates the necessity for additional wound support in debilitated patients who ambulate early, and in those with a chronic cough.

Summary and Conclusions

Successful gallbladder surgery necessitates:

1. A complete physical examination with special evaluation of the biliary, gastro-intestinal, cardiac and respiratory systems.
2. Correction of existing metabolic deficiencies.
3. A surgical team consisting of a competent anaesthesiologist, trained assistants and adjutant personnel working in an adequately lighted operating room.
4. A surgeon who realizes that he is undertaking a hazardous operation where the margins of safety are small and that he is likely to encounter anatomic variations which will require correct interpretation if the patient's life is not going to be jeopardized or his future welfare and that of his family impaired.

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Editorials



The House of Delegates of the 101st annual session of the Medical Association of the State of Alabama elected Dr. James Gorden Daves of Cullman as president-elect. Dr. Daves will serve as president-elect during the ensuing year and will be installed as president at the annual session in Mobile, April 25, 26, 27, 1963. Dr. M. Vaun Adams of Mobile was installed as president at the 1962 session.

Dr. Daves became a member of the Association in 1924. He served as vice-president of the Northwestern Division from 1928 to 1953. He was a member of the Committee on Medical Care and Public Relations from 1948 to 1956 when the committee was renamed the Committee on Public Relations. He served on this committee until 1959. He was elected

and has served as a member of the Board of Censors since 1954.

The new president-elect is a native of Alabama, born in Winston County where he attended high school at Double Springs. Dr. Daves took his pre-medical training at the University of Tennessee and received his M. D. degree from Emory University in 1920.

Dr. Daves has practiced general medicine in Cullman County since 1929, and he is a former president of his county medical society.

He is a member of the Alabama Academy of General Practice, Southern Medical Association, American Academy of General Practice, and American Medical Association.

Dr. Daves married Louise James from Bridgeport, Alabama; and they have two daughters—Mrs. Peggy Daves Hamilton of Macon, Georgia, and Martha Maurice Daves, member of the faculty of Eastern Illinois University—and three grandchildren.

Other officers elected at the 1962 annual session are Dr. James H. Meigs, Anniston, vice-president of the Northeastern Division; Dr. Robert Parker, Montgomery, and Dr. J. P. Collier, Tuscaloosa, re-elected to the State Board of Censors; Dr. D. G. Gill, re-elected State Health Officer for a five-year term.

Transactions of the House of Delegates of the 1962 session will be published as a supplement to the July issue of The Journal of the Medical Association of the State of Alabama.

IMPARTIAL MEDICAL TESTIMONY

There can be no such thing as "impartial" or nonpartisan medical testimony by physicians, according to a prominent attorney. Every doctor is "partial" to his own opinion; and once that opinion is expressed the doctor will defend it in the courtroom.

Mr. Marshall Houts, editor of a medical journal for lawyers, says by labeling the medical witness "impartial," we do not alter his basic attitudes which stem from a lifetime of professional practice. Some doctors at the drop of a hat see a protruded intervertebral disc as the cause of most low back pain. Others scoff at this disease entity and admit only grudgingly that it can exist. Some readily state that myocardial infarction can result from a blow to the chest while others are reluctant to accept this etiology.

Mr. Houts takes issue with the AMA House of Delegates who unanimously endorsed the concept of nonpartisan medical testimony at their New York City convention. While the AMA concept is founded on the premise that partiality is based only on monetary considerations, Mr. Houts feels that it omits the other potent factors which are always involved.

Most medical opinion, he feels, is based on factors which are purely subjective with the doctor. The grading of an ankle jerk as I, II, III, or IV involves subjective determinations in the mind of the doctor. The same is true with the classifications of "slight," "moderate," or "severe" in the measurement of gross atrophy or in interpreting 95 per cent of all X-ray studies.

According to Mr. Houts: "The most dangerous witness of all is the witness who labors under the illusion that he is totally and completely impartial and nonpartisan."

The editor feels the answer lies in orienting all doctors to the courtroom and to the intricacies of the adversary system. The medical profession must be taught not to abhor the courtroom but to feel comfortable in it.

RADIATION SICKNESS

There are many misconceptions about radiation sickness, one of the most common being that it cannot be treated or cured.

Actually, it can be treated; and most persons will recover just as they would from any other illness, according to information published by the AMA Council on National Security.

Radiation sickness is not really a sickness in the usual sense of a disease caused by germs, such as the common cold. What actually happens is that radiation has an effect only on living cells; and because our body is made up of millions of these tiny living cells, their ability to function properly is definitely affected by radiation. The greater the number of these cells affected, the greater the sickness.

The basic rule for the physician in treating radiation sickness is to treat the symptoms. If the victim complains of nausea or has a fever, these symptoms should be treated exactly as they would be under other circumstances.

If the amount of radiation received has not been too great, a person can recover from radiation sickness just as he would recover from any sickness with proper care and treatment.

Perhaps the best comparison is the individual who is in perfect health and gets a slight cold. He normally can throw off this cold very rapidly, in a matter of a day or two, and be back on his feet and feeling well. However, the individual who is subject to cold germs and is already in a run-down condition will take much longer to throw off the effects of the common cold. This same principle can be applied in the case of radiation sickness.

The Council's findings dispelled some half-truths regarding the physical changes which can be produced by radiation. Statements that radiation will result in hair loss and sterility and produce burns over the entire

body contain only a very small degree of truth.

It is true that if you receive a radiation exposure of approximately 300 roentgens over a short period of time, there is a chance that after two or three weeks you may lose your hair. But in several months your hair will grow back just as good as it is today.

The only time you may be 'burned' is when fallout remains on exposed skin surfaces. The best immediate protection is simply to wash exposed skin surfaces thoroughly.

Sterility, the Council pointed out, depends on the amount of radiation received.

Those working in areas where radiation is present may become temporarily sterile if they fail to protect themselves. However, they will regain their ability to reproduce. This may take weeks or months.

If a person is exposed to a large dose of radiation, he may become permanently sterile; but the chances are very small if protective measures are taken.

ACCIDENTAL POISONING

An Indiana patron of an automatic laundry was asked by his daughters, aged 9 and 7, for two nickels with which to purchase soft drinks. When, after a few minutes, he searched out the girls to find where such low-priced refreshment could be bought, he found the children with two unmarked paper cups full of a clear liquid. Only the older child had partaken, and she had promptly expelled the drink as unworthy. Neither child, therefore, was injured. The liquid turned out to be a bleach with up to three per cent available chlorine. It had come from an easily operated vending machine with a coin slot 42 inches from the floor.

HEART ASSOCIATION

The American Heart Association has prepared a guidebook for physicians using anticoagulant therapy.

The physiologic effects, administration, contraindications, and appropriate antidotes of heparin and coumarin-type compounds are discussed in a new booklet entitled "A Guide to Anticoagulant Therapy."

It emphasizes the importance of individual treatment, careful clinical observation, and frequent reliable laboratory tests. In addition, many common problems of anticoagulant therapy are discussed in question and answer form. It also contains several tables and selected references.

The booklet was prepared for the Heart Association's Committee on Professional Education by Dr. Benjamin Alexander and Dr. Stanford Wessler of Beth Israel Hospital in Boston.

Single copies of the booklet may be obtained from the Alabama Heart Association, 2912 7th Avenue South, Birmingham 5, Alabama.

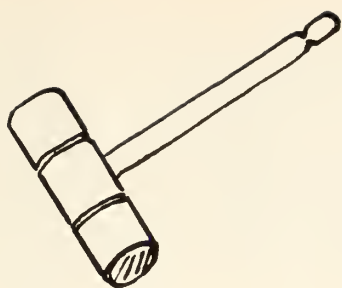
HEART MEETING

The Alabama Heart Association will hold its 11th annual South Alabama Scientific Session on Cardiovascular Diseases at the Grand Hotel in Point Clear, Alabama, on June 29-30.

The Friday afternoon session will feature lectures by Drs. Eugene A. Stead, Jr., Richard Gorlin, George E. Burch, and Tinsley R. Harrison.

Dr. E. E. Eddleman, Jr., and Dr. T. J. Reeves along with Dr. Gorlin and Dr. Stead will participate in the Saturday morning session.

All physicians are invited to attend the meeting according to Dr. Harry M. Simpson, Jr., president of the Alabama Heart Association.



President's Page



THE HOUR OF DECISION

History may record that the physician's ineptitude for decision was a profound factor in the determination of his ultimate destiny.

Our failure adequately to comprehend the alternative may amount to an indictment of our vision and demonstrate an inability to offer purposeful leadership.

The physician, in addition to his scientific knowledge, must study the socio-economic aspects of medicine. He must be familiar with the ever changing concepts of adequate health care and how these challenges to medicine can be properly met. The conflicting ideologies of labor, management, and government (political) regarding medicine are creating fundamental disturbances to the traditional doctor-patient relationship. The hospital-doctor relationship is undergoing changes with the advent and growth of the multiple insurance plans (with varying philosophies) and industrial health plans.

The adoption of a relative value index by American medicine might possibly give insurance companies the necessary incentive and financial backing required to write insurance plans on an actuarial basis. While the rugged individualist decries regimentation, this relative value index (not a fee schedule) may be the least obnoxious and the most helpful in regulating the irresponsible in the matter of fees. The battle of "equal fees for equal services" has not been resolved; but the variable fees depending on the financial position of the patient suffered a mild stroke with the passage of government Medicare, Federated Health Services for govern-



ment employees, and variable indemnity contracts over the nation.

The free enterprise system is the foundation of our ascension to the pinnacle of world leadership. It is based on a price, which is variable, for a given item or article. Essentially, everyone pays the same price for the same article whether he is rich or indigent. Following this same philosophy a patient should pay essentially the same price for the same service. This is the indemnity system as we know it in medical insurance plans. This is analogous to the payment of a definite premium for various insurance contracts such as fire, burglary, accident, sickness, and life insurance. There is a given fee (premium) for a stipulated dollar value which is stated in the contract. The premium is not reduced or decreased because of the financial situation of the purchaser. The free enterprise system

is based on a definite fee for every commodity whether it be in Alaska or Zanzibar.

Now how does a service plan differ from the indemnity plan? In the service plan there is a known fee for an unlimited and unknown amount of medical service. In effect, then, the medical profession is a coinsuror with the insurance company, which is unknown to the recipient patient. It would appear wise for the medical profession to withdraw and allow the insurance underwriters the privilege of operating the insurance business.

The practice of abusing insurance, if it exists, must be replaced by extensive cooperation to eradicate areas of "padding or feather-bedding" and improper utilization. The medical profession has suffered from an almost total inertia when medical disciplinary action, as distasteful as it is, was indicated.

Audit committees in the hospital, as well as insurance or grievance committees in the medical societies, should function impartially against the offenders of medical society regulations in the same manner as our tissue committees have performed. Such action will be immediately reflected in our insurance programs.

The third party in medicine is here to stay, whether we like it or not. We have a choice, if it is not too late, to support wholeheartedly the voluntary insurance program or be a cog in the vast wilderness of socialized medicine.

READ—STUDY—EVALUATE—DISCUSS
—make your informed, educated decision—
then ACT—and not before.

W. Sam Evans, M.D.

THE HEADLONG RUSH TOWARD DISASTER

If this country is to survive as anything resembling the democracy of stalwart individuals standing upon their feet through the free enterprise system that it was intended to be by the men who died at Lexington, Concord, and Valley Forge almost two hundred years ago, the headlong rush toward the ultimate disaster of a welfare state must be discouraged. Traditionally, the medical profession has always been in the forefront of this battle; even now we are under heavy fire to bring us, too, under the domination of the government. If we fail to stand firm, the cause is lost beyond redemption.—*What Price Welfare?*: Frank G. Slaughter, M. D., *Journal of Florida Medical Association*, Dec. 1961.



ASSOCIATION FORUM

Reason Or Razzle-Dazzle

LEONARD W. LARSON, M. D.

President

American Medical Association

I am delighted to be here today at the 101st Annual Session of the Medical Association of the State of Alabama. Since becoming President-Elect I have been in almost every Southern state, and I am grateful for the opportunity to be here in Alabama—to visit and to speak to you before my term of office is concluded.

Alabama may not be the first state in size, either by population or by area. It may not be the first state in industrial output, in agricultural production, or in tourist trade. But Alabama is *first*—*first* in every listing of the states, and *first* in roll calls in Congress, in political conventions, and in the House of Delegates of the American Medical Association.

Even Alaska could not take away your unique and enviable distinction of being *first*

in the list of the 50 states. I guess the only thing you have to worry about is whether or not some future state comes up with a name like aardvark, abacus, ABC or maybe even AAA.

But you have been *first* for a long time, and you are *first* today. Let's keep it that way.

This afternoon let me emphasize to you that I would like to see you *first* in the opposition of all states to the federal government intervention into the voluntary and private practice of medicine and medical care via the Social Security route.

As you know, the Administration has opened its big push to get the King-Anderson bill out of the House Ways and Means Committee to a floor vote. The pressure by the Administration, the AFL-CIO and the National Council for Senior Citizens will be almost unbelievable in the next month or so.

Make no mistake about it, either: The White House is calling the shots in the tremendous efforts being exerted to get the fi-

Delivered before The Medical Association of the State of Alabama, April 26, 1962, Municipal Auditorium, Birmingham, Alabama.

nancing of some medical care for the aged under the Social Security system.

In its April 2 issue Newsweek magazine made this quite clear when it quoted Blue Carstenson, executive head of the National Council for Senior Citizens and a former member of the Department of Health, Education and Welfare. He said: "We generate the steam among the constituents and the White House calls the shots."

You can expect Administration officials to make more and more appearances around the country. One Administration spokesman even said that "if things bog down, top officials from Washington will make live appearances to pump new blood in the sagging area."

Recently a Boston newspaper columnist said the White House will conduct a crash program in Massachusetts to stimulate massive grass-roots support for the King-Anderson bill. Within seven weeks, he said, more than 250 speakers delivering 5,000 speeches will beat the drums in Massachusetts for the King-Anderson program. Culmination of their activities, of course, will be the gigantic rally in New York City's Madison Square Garden of senior citizens at which the President will speak.

These spectacular activities, plus other razzle-dazzle efforts, obviously must be countered with our best efforts, with facts and with the truth.

This then is the time that each of you must work, getting the real story of King-Anderson to the public. Our stand on this issue is right and is in the interests of the people. Our story must be told; it must be heard and read, and it must be understood. This is the task of each one of us. There is no miraculous, one-shot method to defeat this measure. If you have been sitting back—individually or collectively—waiting for a miracle, forget it and go to work with your pen and pencil and with your voice.

All state and county medical societies, thousands of physicians and their wives, and hundreds of our allies are deeply involved in

scores of ways to defeat this unnecessary, costly and bad legislation. If you haven't joined in these efforts and if you haven't done anything yet, do not wait an hour longer. I urge you to get active now. Your delay and apathy could mean the difference between victory and defeat.

Perhaps there isn't a man or woman here who needs such an exhortation to get into the fight. If not, then I urge each of you to take the message to those colleagues and friends of yours who up until now have been too busy and have not taken the time to do their part.

This campaign is not the sole fight of the American Medical Association, the Medical Association of the State of Alabama, the county societies, or any single physician. It is, and must be, the campaign of each one of us.

We cannot jam 20,000 partisan elder citizens into an arena to hear emotional and propaganda appeals by high government officials, politicians and self-appointed leaders of National Senior Citizens clubs.

But we can talk reason, common sense and fact. We can tell our neighbors and friends—in conversation and in written words—the truth about the King-Anderson bill and the implications of putting a centralized federal government in charge of the purchase, provision and administration of the medical care of a segment of the American population.

There is too much at stake for our patients, for American wage-earners, for the voluntary system of medical care and its financing, for the future of the private practice of medicine and the free enterprise system, and for the freedoms of the public, the profession, the hospitals, the health insurance industry and the entire health team for anyone of us to be lukewarm, to do nothing, or to throw in the sponge.

It is no secret that your AMA is stepping up its activities in the face of the Administration's all-out grandstand campaign. State and county medical associations also are doing this. Your personal efforts are needed now.

Don't underestimate them. Don't let them go unused in the next six weeks.

Of course, the din of confusion, ballyhoo and propaganda from the opposition will be loud and unceasing. But through it all must come the truth, the facts and reason from all of us. Reason, I say to you, must prevail over pure politics and vote-getting.

We oppose this legislation because we believe the measure would be detrimental to the public interest. The King-Anderson bill is bad legislation and a dangerous proposal, and for some time now the AMA has been telling the full facts about this bill for financing certain medical benefits for the elderly through an increase in the Social Security tax.

Among the facts we believe of interest to the people is that the King-Anderson bill would provide medical care to everyone over 65 eligible for Social Security benefits regardless of need, regardless of their income or other resources, regardless of their present coverage of their medical care costs by voluntary health insurance.

Yes, it is a fact that wage-earners and their employers would be compelled to pick up the bill for medical expenses of millions of aged who are able to pay their own way and who want to keep it that way.

But proponents of the King-Anderson bill have a curious allergy to facts such as these. They react with violent attacks on the AMA, attacks which have nothing whatever to do with the bill itself.

The issue is the King-Anderson bill—its costs, its taxes, its regulations and controls of hospitals and physicians, and its future. The issue is not the Administration or personalities; it is not Democrats or Republicans; it is not the AMA or the AFL-CIO, and it is not medical care for the aged or no medical care for the elderly.

I repeat that the issue is the King-Anderson bill, all its implications and complications and all its fine print.

The basic issue of the King-Anderson bill is this: Should wage-earners and their em-

ployers be forced to pay higher Social Security taxes to provide medical care for millions of others who are financially able to take care of themselves?

Medical care for the aged is not in dispute. Everyone agrees that all our citizens should be provided whatever medical care they require. Those who are in need of financial help with their medical expenses should be helped. And under the Kerr-Mills Medical Assistance for the Aged law the needy and the near-needy elderly will get the full assistance they require.

For those who can afford to pay their own way voluntary health insurance is the answer. Already more than 53 per cent of all persons over 65 have some kind of voluntary health insurance. Is there any reason for the federal government to take away more earnings of young workers to pay the cost of hospital care for the 9 million aged who already have insured themselves?

Proponents of King-Anderson, of course, have promoted the false idea that many, many older people are in need of medical care, and either cannot get it or supposedly are too proud to seek it.

Yet three months ago I wrote to every congressman and senator asking for the names of specific individuals over 65 who could not receive health care because of inability to pay. If a real health care crisis exists among the aged as King-Anderson proponents contend, how come I have *not* yet received a single name?

The medical profession has guaranteed medical care to everyone regardless of his ability to pay. And this includes both the young and the old. For years we have stood back of this pledge, and we will continue to do so.

We sincerely recognize that there is real need for financing medical care for some older people. Our profession's record of supplying millions of dollars worth of free care to older people annually, and our profession's full support and promotion of the Kerr-Mills law to help those who need help are convinc-

ing testimonials to our interest and concern for all these older people in need.

And for those who can take care of themselves we are firmly convinced that the voluntary health insurance industry *can, does and will* provide the necessary policies to cover these people against the financial hardships of costly illness.

We have favored and supported all such plans to protect the aged. We oppose those government proposals like the King-Anderson bill which destroy the phenomenal growth of health insurance among the aged.

Until now the Social Security has been a program of cash benefits for eligible beneficiaries. It must not now be changed to introduce a system of service benefits which are purchased and operated by the federal government from Washington with tax dollars.

These taxes already are taking a sizeable portion from wage-earners' paychecks and from employers' incomes. Now the King-Anderson proponents would take even more from both sources.

Those who are saying that the bill would only cost the worker a nickel a day or a dollar a month *are not telling the truth*. The King-Anderson bill proposes to levy a quarter of one per cent on incomes up to \$5,200. Yes, this is a tax increase of \$13, but they conveniently forget that the bill raises the tax base from the present \$4,800 to \$5,200. And my arithmetic tells me that if you multiply this increase of \$400 by the current tax rate of 3½ per cent, you come up with another \$12.50. This then is a total tax raise of \$25.50, or twice the amount that the King-Anderson proponents are willing to talk about.

Furthermore, the employer pays another \$25.50 on each employee. And everyone here knows that if the employer's taxes go up, he is going to raise prices to make ends meet. In the long run it will be the wage-earners who are going to pay their own \$25.50 plus the cost of inflation resulting from any King-Anderson bill.

I need not remind you that every new federal tax imposed limits more strictly the potential tax resources of the state of Alabama, every other state government and all local governments.

This combined new tax of \$51 annually is only the beginning, too. Suppose the cost of King-Anderson were double the HEW estimate as several insurance actuaries have said it would be. Whether the *tax base* or the *tax rate* were raised to meet these higher costs, the effect would be the same: More and more taxes from wage-earners and employers to pay for medical care for millions who can take care of themselves.

Older people also have been led to believe that the King-Anderson bill would cover most, or all, of their medical care expenses. This is *totally false*. Last month Rep. Tom Curtis of Missouri said in the Congressional Record that the bill would cover less than 25 per cent of the medical expenditures of persons 65 and over.

Are the King-Anderson proponents purposely ignoring this fact? I would think so. Apparently their only concern is to get their foot-in-the-door and then go from there expanding the medical care benefits and, of course, raising the tax bite on wage-earners and employers.

With the Social Security tax rate already scheduled to go to 4½ per cent each for employee and employer by 1968, and with future increases if King-Anderson were to become law, perhaps this nation would not be far from the vision of Mr. Wilbur Cohen, assistant secretary of HEW, who has testified that Social Security ultimately would require a 20 per cent total tax on employees and employers on a taxable wage base of \$9,000.

Of course, proponents of the bill don't talk about expansion—at least not now before they have established the "service concept" within the Social Security system. However, there is ample evidence to show that these kinds of programs do expand—in a quick and skyrocketing fashion.

For example, in 1956 the disability amendment was passed allowing persons age 50 and over to start drawing old age benefits if they became "permanently and totally disabled." A few years later the age 50 requirement was completely eliminated. This was the first step.

At first the projected total disability amendments were to amount to 318 million dollars by 1962. Well, here we are in 1962 and now the projected total cost is 935 million dollars or three times the original.

Now it also is estimated that by 1965 these payments will be running 1 billion 163 million dollars!

Yes, those who support the King-Anderson bill refuse to talk about possible future expansions, but we insist that *now* is the time to talk about them. The proposed legislation would establish the "service benefit" principle in the Social Security system, and we say that the American people must be told honestly now, *not later*, where this new principle will take them and their paychecks.

In the 1930's when the Social Security Act of "cash benefits" was proposed, the people were told that the Act would start with a 1 per cent tax each on employe and employer on wages up to \$3,000. They were told that the percentage would rise through the years to a permanent level of 6 per cent—3 per cent for employe and 3 per cent for employers—by 1949.

While Social Security proponents then underestimated the cost somewhat—because the wage base is now \$4,800 and the tax rate will go to 4½ per cent by 1968, at least they told the American people what to expect in the way of future payroll taxes under the system.

Why shouldn't the American people now be told what this new principle of "service benefits" of *limited* or *25 per cent* medical care for the aged, regardless of need or want, will cost immediately and in the future?

The American people are entitled to know that the immediate cost is going to be twice

that which the King-Anderson proponents are talking about. The American people are entitled to know what the future costs of expansion of benefits will be.

If there is anyone who doubts that the bill will be expanded or that it will cost more in future years, he need only return to the old Forand bill of proposed benefits. That bill offered more benefits than King-Anderson and it did not have a \$20 to \$90 payment from each hospitalized beneficiary as does the King-Anderson bill.

The same proponents of the old Forand bill now are supporting the King-Anderson bill, including Mr. Forand who is heading up the National Council of Senior Citizens. They are the same ones who favored broader benefits a few years ago. Is there any reason then to assume that once the King-Anderson bill were to pass, they would not immediately propose more medical care benefits for the 14¼ million aged? I think not.

I am firmly convinced that passage of this bill would be the first major, irreversible step toward complete government medicine in the United States.

I remind you that only two moves would be required to achieve this.

The first would be the provision of full medical care for the aged, including all physicians' services. The second would be the elimination of all age restrictions.

For the many reasons I have cited, and for many more which I do not have time to discuss, this legislation is a bad and dangerous proposal.

To defeat this measure all of us have a tough job ahead of us. Our foes are formidable. However, our support is growing as the Gallup Poll indicates, and it should continue to grow as we get our story to the American people.

We must see that *reason*, not emotion and confusion, prevails in the decision by the people and by Congress on this issue.

around the state



Honored guests at this year's President's Ball were Mrs. Harlan English, national president of the Woman's Auxiliary, and Dr. Leonard W. Larson, president of the American Medical Association. Pictured above (left to right) are Mrs. M. Vaun Adams, Dr. Adams, Mrs. English, Dr. Larson, Dr. John W. Simpson, Mrs. Simpson, Dr. and Mrs. Buford Word.

President John W. Simpson is shown (right) assisting Dr. Word with the drawing of door prizes.



Dr. Paul Palmisano, University of Cincinnati College of Medicine and guest speaker at the 101st annual session, is shown below with his former classmate and his wife, Dr. and Mrs. Harry Shirkey, at the President's Ball.

Dr. Luther Hill, chairman of the Committee on Public Relations (below right) awarded the Douglas L. Cannon Medical Reporter Award to Bob Jones and Wendell Harris of WAPI-TV at the President's Ball.





Dr. J. G. Daves of Cullman (left) addresses the House of Delegates following his election to president-elect.

Dr. John Simpson (below) turned the president's gavel over to Dr. M. Vaun Adams at the close of the final session.



Dr. John Simpson (above left) was one of the 15 past presidents at the meeting to receive a past president plaque from Dr. M. Vaun Adams.

Miss Margaret Partlow of Tuscaloosa High School (below), winner of this year's essay contest, is shown receiving her \$100.00 check from Mrs. William Rosser, chairman of the essay contest.



The Woman's Auxiliary

The Auxiliary page this month might be called "Diary of a Convention." It is addressed particularly to those doctors' wives who were not in Birmingham on April 26th and 27th. We hope the doctors will take it home for them to read. You don't know what you missed. The reports were inspiring, and Vicki Cunningham was a beautiful and efficient presiding officer.

On Thursday we lunched at a French sidewalk cafe. It was in the Tutwiler Hotel; but once you entered the door of the Terrace Room, you would not have known it.

We had a number of distinguished guests: Dr. Leonard W. Larson, noted pathologist from Bismarck, North Dakota, president of The American Medical Association; Dr. John Simpson, president, and Dr. Vaun Adams, president-elect of the Medical Association of the State of Alabama; and Dr. G. J. Roscoe, president of the Jefferson County Medical Society. All of these gentlemen were accompanied by their lovely wives. Vicki's husband, Dr. Wm. A. Cunningham, was present; but my husband did not get to attend due to lack of cooperation from the stork.

Our special feminine guest was Mrs. Roy Douglas, Huntingdon, Tennessee, president of The Southern Medical Auxiliary. Mrs. Douglas, who is most capable and charming, was our first speaker. She told of the work of the Southern Auxiliary especially the celebration of Doctor's Day which is peculiar to the Southern states.

Dr. Larson was the next speaker. He reminded us "the Administration" is now engaged in a gigantic struggle to put over the King-Anderson bill. This bill would put limited medical care for those over 65 (whether they need help or not) under social security. He said, "We favor the mechanisms of voluntary health insurance and the federal-state matching fund program called

the Kerr-Mills Law." Dr. Larson remarked he sincerely believes the passage of the King-Anderson bill would be the first major, irreversible step toward the complete socialization of medical care. He urged each doctor's wife to do her part in the fight to defeat this bill.

We had two dutch breakfasts sponsored by the Bessemer Auxiliary. This was a new feature and was enjoyed very much.

The Friday luncheon was an exclusively feminine affair at "The Club." Our guest speaker was Mrs. Harlan English, Danville, Illinois, president of The Woman's Auxiliary to the American Medical Association. She is very lovely and an excellent speaker. Her topic was the role of the doctor's wife in all of its phases—from keeping her home to her joint responsibility with her husband to guard the public health and fight for the preservation of the free practice of medicine in our country.

A beautiful fashion show followed. The clothes were from Kessler's and the models were doctors' wives. Just before the show was over Mrs. Wm. G. Thuss (Birmingham) arrived from Pennsylvania. We were happy to see her. We are all so proud of Mrs. Thuss who will be installed as National Auxiliary president in Chicago in June. She is the second National president that Alabama has ever had. You are all invited to be there June 25-29.

My space has run out and my "Diary" is far from complete. Lest you think we are too social, let me hasten to assure you this is not true. An account of our business sessions will be found in another issue of "The Journal." If you would like to know all we do, join us! We need every doctor's wife. Begin making plans now to be in Mobile at convention time next April.

IDA KIMMEY,
President

INDEX

THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Volume 31

July 1961-June 1962

EXPLANATORY NOTES

Arrangement of Index

The index is arranged under the following headings:

- I. Authors
- II. Subjects
- III. Editorials
- IV. President's Page and Organization Section
- V. The Association Forum
- VI. Medical Center News
- VII. State Department of Health
- VIII. Book Abstracts and Reviews
- IX. Around the State
- X. Woman's Auxiliary Page
- XI. Obituaries

I. AUTHORS

A.

- Ashmore, James—Biochemical Lesions in Diabetes Mellitus, 108
- Aydar, Cetin K. and Greenblatt, Robert B.—Clinical and Experimental Studies with a New Progestin—Dimethisterone, 53

B.

- Borland, James L., Jr., McBee, James W., Davis, Thomas D., Jr., and Ruffin, Julian M.—Two Practical, but often Neglected, Aspects of the Management of Peptic Ulcer, 294
- Boysen, John E.—The Diagnosis of Occupational Disease, 62

C.

- Carmichael, Emmett B.—Beacon Lights in Alabama Medicine, 31
- Crenshaw, James F.—A Review of Carcinoma of the Pancreas, 224

E.

- Edwards, W. Sterling—Diagnosis and Management of Thrombophlebitis and its Sequelae, 230
- Eggspuehler, J. J.—The Need for Medical Education in General Aviation, 190

- Eichold, Samuel and Wright, R. Denny—Glucagon as a Practical Tool for Hypoglycemia, 119
- Ennis, A. L.—A Report of Two Cases of Postpartum Heart Disease, 255

F.

- Fallis, Laurence S.—Safeguards in Gallbladder Surgery, 398

H.

- Hofmeister, F. J.—Gynecic Malignancy—Our Responsibility the Cervix Only?, 288
- Hofmeister, F. J. and Barbo, Dorothy—The Problem of Prolonged Labor, 363
- Hosty, Thomas S., and Mitchell, Thelma Walker—Tuberculin and Histoplasmin Reactions on Adolescents in Wilcox County, Alabama, 185

K.

- Knowles, Harvey C., Jr.—Fat Metabolism and the Pathogenesis of Vascular Disease in Diabetes Mellitus, 102
- Knowles, Harvey C., Jr.—Diabetes in Pregnancy, 122

L.

- Llewellyn, Eva L.—Counseling with Parents of Handicapped Children, 329
- Lyons, Champ—Prophylaxis of Tetanus, 25

M.

- Marble, Alexander—Treatment of Diabetes with Especial Reference to the Oral Hypoglycemic Agents, 93
- Martin, Bruce C.—Principles of Treatment of Facial Injuries, 143
- Mudd, Joseph P., Jr.—A Non Parasitic Hepatic Cyst Treated by Marsupialization, 13

N.

- Nyhus, L. M. and Condon, R. E.—Anatomic Considerations in Preperitoneal Hernioplasty, 252

O.

- Ochsner, Alton, Blalock, J., and McPherson, F.—Carcinoma of the Stomach, 249

P.

- Page, M. E., Ringsdorf, W. M., Jr., and Cheraskin, E.—Hormones and Hemopoiesis I. Posterior Pituitary Extract and Erythrocyte Count, 1

INDEX TO VOLUME 31

Price, James H., Hubbard, J. L., and Paul Petcher—
Bilateral Tubal Pregnancy, A Case Report, 60

R.

Ringsdorf, W. M., Jr., and Cheraskin, E.—Physio-
logic Cortisone-Glucose Tolerance Test, 359

Rogers, J. H.—The Low Incidence of Pulmonary
Embolism in Multiple Myeloma with Specula-
tion on the Possibility of Active Immunization
Against Thrombosis and Atherosclerosis, 323

Rogers, J. H. and Corpe, R. F.—Tuberculosis and
Coronary Thrombosis II—The Low Incidence of
Fatal Heart Attacks in Patients in a Large Tu-
berculosis Hospital, 389

Rusk, Howard A.—The Philosophy of Rehabilita-
tion, 353

S.

Scheie, Harold G.—What the General Practitioner
Should Know about Glaucoma, 317

Scheie, Harold G., and Ashley, Byron J., Jr.—Ocu-
lar Injuries and the General Practitioner, 392

Schultz, F. Bernard—The Use of Guanethidine in
Private Practice, 177

Scurry, Maurice M.—Strokes and Heart Attacks,
137

Shipp, Joseph C.—Glucose Regulation Role of Al-
pha and Beta Cells of Pancreatic Islets, 115

Sidbury, J. B., Jr.—Non-Glucose Melliturias, 112

Strong, Jack B., Jr., and Boshell, Buris R.—Com-
parison of a Rapid Bedside Blood Glucose Meth-
od with Two Clinical Laboratory Blood Glucose
Methods, 9

T.

Thorek, Philip—The Pancreas and the General
Practitioner, 217

W.

Ward, Mary J. and Brock, William M.—Idiopahic
Hypoproteinemia, Menetrier's Syndrome, 28

Weaver, Neill K.—The Cardiac Worker in Indus-
try, 148

Weinstein, Jacob J.—Postgastrectomy Problems—
With Special Reference to the Malabsorption
Syndrome, 277

II. SUBJECTS

B.

Beacon Lights in Alabama Medicine (Carmichael)
31

Bilateral Tubal Pregnancy, A Case Report (Price,
Hubbard, and Petcher) 60

Biochemical Lesions in Diabetes Mellitus (Ash-
more) 108

C.

Carcinoma of the Pancreas, A Review of (Cren-
shaw) 224

Carcinoma of the Stomach (Ochsner, Blalock and
McPherson) 249

Cardiac Worker in Industry, The (Weaver) 148

Clinical and Experimental Studies with a New Pro-
gestin—Dimethisterone (Aydar and Greenblatt)
53

Comparison of a Rapid Bedside Blood Glucose
Method with Two Clinical Laboratory Blood
Glucose Methods (Strong and Boshell) 9

D.

Diabetes in Pregnancy (Knowles) 122

F.

Facial Injuries, Principles of Treatment of (Mar-
tin) 143

Fat Metabolism and the Pathogenesis of Vascular
Disease in Diabetes Mellitus (Knowles) 102

G.

Glaucoma, What the General Practitioner Should
Know About (Scheie) 317

Glucagon as a Practical Tool for Hypoglycemia
(Eichold and Wright) 119

Glucose Regulation Role of Alpha and Beta Cells
of Pancreatic Islets (Shipp) 115

Guanethidine in Private Practice, The Use of
(Schultz) 177

Gynecic Malignancy—Our Responsibility the Cer-
vix Only? (Hofmeister) 288

H.

Handicapped Children, Counseling with Parents of
(Llewellyn) 329

Hormones and Hemopoiesis I. Posterior Pituitary
Extract and Erythrocyte Count (Page, Rings-
dorf, and Cheraskin) 1

I.

Idiopathic Hypoproteinemia, Menetrier's Syndrome
(Ward and Brock) 28

L.

Labor, The Problem of Prolonged (Hofmeister and
Barbo) 363

M.

Medical Education in General Aviation, The Need
for (Eggspuehler) 190

N.

Non-Glucose Melliturias (Sidbury) 112

Non Parasitic Hepatic Cyst Treated by Marsupial-
ization, A (Mudd) 13

O.

Occupational Disease, The Diagnosis of (Boysen)
62

Ocular Injuries and the General Practitioner
(Scheie and Ashley) 392

INDEX TO VOLUME 31

P.

- Pancreas and the General Practitioner, The (Thorek) 217
- Peptic Ulcer, Two Practical, but often Neglected, Aspects of the Management of (Borland, McBee, Davis, and Ruffin) 294
- Physiologic Cortisone-Glucose Tolerance Test (Ringsdorf and Cheraskin) 359
- Postgastrectomy Problems—With Special Reference to the Malabsorption Syndrome (Weinstein) 277
- Postpartum Heart Disease, A Report of Two Cases of (Ennis) 255
- Preperitoneal Hernioplasty, Anatomic Considerations in (Nyhus and Condon) 252
- Pulmonary Embolism in Multiple Myeloma with Speculation on the Possibility of Active Immunization against Thrombosis and Atherosclerosis, The Low Incidence of (Rogers) 323

R.

- Rehabilitation, The Philosophy of (Rusk) 353

S.

- Safeguards in Gallbladder Surgery (Fallis) 398
- Strokes and Heart Attacks (Scurry) 137

T.

- Tetanus, Prophylaxis of (Lyons) 25
- Thrombophlebitis and its Sequelae, Diagnosis and Management of (Edwards) 230
- Treatment of Diabetes with Especial Reference to the Oral Hypoglycemic Agents (Marble) 93
- Tuberculosis and Coronary Thrombosis II—The Low Incidence of Fatal Heart Attacks in Patients in a Tuberculosis Hospital (Rogers and Corpe) 389
- Tuberculin and Histoplasmin Reactions on Adolescents in Wilcox County, Alabama (Hosty and Mitchell) 185

III. EDITORIALS

- Accidental Poisoning, 406
- A.M.A. Meeting, 300
- Annual Session, 297
- Are You Interested?, 238
- Board of Censors, 196
- Cancer Grant, 16
- Candidates' Views on Health Care for the Aged, 336
- Cardiac Massage, 15
- Color Television, 297
- Dermabrasion for Facial Scarring, 238
- Diabetes Detection Drive and the American Diabetes Association, 129
- Diabetes Mellitus, 372

- Dixie Postgraduate Assembly, First, 14
- Daves, Dr. J. G., 404
- Drug Samples, Use and Abuse, 258
- Food Poisoning, 16
- Football Helmets, 68
- Free Medical Care, 38
- Generic versus Trade Names, 39
- Goodwill in Action, 370
- Heart Association, 406
- Health Insurance, Half of Aged Have, 67
- Heroic Nurse, 39
- Hunters, Beware!, 68
- Impartial Medical Testimony, 405
- Influenza Down in 1961, 153
- Kefauver-Celler Bill, 299
- Kerr-Mills Vs. King-Anderson, 333
- Lederle Symposium, 372
- Letters to the Editor, 259
- Malpractice in Alabama, 236
- Medical Research, Federal Support of, 298
- Newburgh Story, 67
- Operation Coffee Cup, 15
- Patent Rights, 38
- Patient Load, 152
- Poison Control Center, 16
- Prescription Prices, 154
- Radiation Sickness, 405
- Relative Value Study in Alabama, Guest Editorial, Current Status of, 69
- South Averages Fewer Illnesses, 152
- Space Age, 39
- Venereal Disease, 298
- West Virginia Story, 298
- White, Dr. Paul Dudley, 39

IV. PRESIDENT'S PAGE AND ORGANIZATION SECTION

- Adams, M. Vaun, 375
- Candid Camera, 19
- Committee on Medical Education and Hospitals, 303
- Committee on Public Relations, 302
- Kimmey, Mrs. John M., 375
- Legislative Committee, 18
- President's Page, 17, 40, 71, 131, 155, 197, 239, 260, 301, 341, 373, 407
- Preview of the 101st Annual Session, 342
- Program of the Annual Session, 261
- Program of the Woman's Auxiliary, 267
- Rural Health Council, 304
- Statement of the Medical Association of the State of Alabama in Opposition to H. R. 4222, 72
- Transactions of the Woman's Auxiliary, Part I, 156
- Transactions of the Woman's Auxiliary, Part II, 198

V. THE ASSOCIATION FORUM

- America's Health—Ours to Preserve, 20
- Another Way to Destruction, 377
- Credo, 379
- Encroaching Control, 76
- Experts Probe Lag in Care of Mentally Ill, 41
- Free Medical Care for the Aged, 242

INDEX TO VOLUME 31

History of Medicine, The, 85, 168
Hospital Care and its Financing, 240
Hospital Use and Costs, A Study of, 345
M. D. Tax Break Due in More States, 305
Medicine and the Social Revolution in Great Britain, 161
Medicine's Seven Deadly Sins, 270
Our Republic—Bulwark against the Tyranny of Majorities, 207
Production, Not Handouts, 44
Reason Or Razzle Dazzle, 409
T. B. Control, The Price of, 204
Then Go Ahead, 307

VI. MEDICAL CENTER NEWS

Medical Center News, 22, 49, 174, 211, 348, 381

VII. STATE DEPARTMENT OF HEALTH

Eradication of Syphilis—Task Force Report, 310
Inter-Agency Co-operation in Medicare for Alabama's Aged, 50
Laboratories, Specimens Examined, 24, 51, 92, 176, 214, 215, 248, 274, 311, 351, 384
Medical Research, 23
Policy—Re Live Virus Vaccine for Poliomyelitis, 383
Preventable Diseases, 24, 51, 92, 176, 214, 215, 248, 274, 311, 351, 384
Recommendations of State and Territorial Health Officers, 247
U. S. Public Health Service and Radiological Health, The, 273

Status of Syphilis Control, The, 91
Viral Hepatitis, Seminar on, 350
Vital Statistics, 24, 51, 92, 176, 214, 215, 248, 274, 311, 351, 384

VIII. BOOK ABSTRACTS AND REVIEWS

A Doctor in Many Lands: Castellani, 216
Blood Diseases of Infancy and Childhood: Smith, 216
Drugs of Choice, 1960-1961: Modell, 52
Epidemic!: Slaughter, 313
Gentle Legions, The: Carter, 314
Management of Fractures, Dislocations, and Sprains: Conwell, 312
Memoirs of a Medico: Alonso, 314
Reluctant Surgeon, The: Hunter, 314
Your Mind Can Make You Sick or Well: Wachtel, 52

IX. AROUND THE STATE

Around the State, 46, 88, 132, 171, 209, 244, 308, 414

X. WOMAN'S AUXILIARY PAGE

Woman's Auxiliary Page, 276, 315, 352, 386, 416

XI. OBITUARIES

Obituaries, 246, 275, 316, 387

